Canadian Foundation for Dietetic Research

Dietetic Research Event: June 09–11, 2016

Winnipeg, Manitoba was the host city of the 2016 Dietitians of Canada Annual Conference.

Through the support of Dietitians of Canada and CFDR, the 2016 event was both an exciting and informative exchange of research and experience-sharing efforts that inspired attendees. The submissions for this year's Canadian Foundation for Dietetic Research (CFDR) event represented the diversity of dietetic research conducted within Canada. The topics highlighted from this year's abstracts include Community Based Nutritional Care, Wellness & Public Health, Determinants of Food Choice, Dietary Intake, Nutrition Health & Education, Dietetic Practice & Education, Clinical Research & Patient Service, and Nutrition Social Media & the Web.

Each presenter provided an 11-minute oral presentation (8 minutes for presenting and 3 minutes for questions). This allowed for meaningful interaction between the presenters and those attending the sessions. This year there were professional and student oral research presentations on each day of the conference. These presentations offered the newest insights into important research findings that apply to dietetic practice.

This research event would not be possible without the commitment and dedication of many people. On behalf of Dietitians of Canada and CFDR, I would like to extend a special thank you to the 2016 Abstract Review Committee who represented research, clinical nutrition, community nutrition, and education: Masha Jessri (Ph.D Candidate, University of Toronto), Joyce Slater (Associate Professor, University of Manitoba) and Miyoung Suh (Associate Professor, University of Manitoba).

We would also like to thank all of our moderators who assisted during the conference to keep our research presentation sessions on time: Marcia Cooper, Miyoung Suh, Andrea Buchholz, Dawna Royall, Paul Fieldhouse, Joyce Slater, Isabelle Giroux, and Bethany Hopkins.

Finally, a special thank you to Michelle Naraine and Greg Sarney at CFDR for their assistance and support throughout the review process.

I enjoyed interacting with many of you at the oral research presentations as we highlighted the findings from our dietetic colleagues across our country!

Christina Lengyel, PhD, RD
Chair, 2016 Abstracts Review Committee
Associate Professor
Director of the Dietetics Program
Human Nutritional Sciences
University of Manitoba

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These abstracts represent research projects of dietitians that were accepted through a peer-review process for presentation.
*Indicates the Presenter [R] = Research abstract [E] = Experience-sharing abstract

CLINICAL RESEARCH (INCLUDING OUTCOMES OF INTERVENTION)

Achieving protein targets in the ICU with a specialized enteral formula

Hopkins B, RD, MEd[1], Alberda C, MSc, RD[2]. [1]Nestle Health Science Canada; [2]Royal Alexandra Hospital, Alberta Health Services [R]*

Background: Critical illness (CI) can have a significant impact on protein needs. Providing adequate protein may improve morbidity and mortality. Guidelines suggest up to 2–2.5 g protein/kg/day with most ICU patients receiving < 0.7 g/kg/day. To meet the needs of CI, higher protein enteral nutrition (EN) formulas may be part of the solution.

Objectives: To demonstrate that a specialized EN formula with 37% calories from protein will deliver at least 80% of prescribed protein needs to CI patients within the first 5 days of feeding and to describe clinicians' experience with this formula.

Methods: In this quality improvement project, patients requiring exclusive EN for up to 5 days were recruited from six Canadian ICUs. Rationale for choosing the 37% protein formula, patient's BMI, protein and energy targets, daily protein and energy delivered (including modular protein and lipid-based medication), feeding interruptions and general tolerance were recorded. The proportion of daily protein intake achieved was calculated on each of the 5 study days for patients with ≥2 days of reported data.

Results: 44/49 patients received the formula ≥2 days. The average protein prescribed was 134 g/day or 1.9 g/kg, with an average protein intake of 112 g/day or 1.6 g/kg. Between 75–83% patients received ≥80% prescribed protein on days 2 through 5. The average energy prescribed was 1626 kcal/day, with an average intake of 1338 kcal/day. The formula was well-tolerated with no GI symptoms reported in 38 (86%) patients. The most common reasons to prescribe the formula were: obesity, lipid-based medications, ratio of protein/calories, high protein needs, and renal replacement therapy.
Implications & Conclusions: A specialized EN formula with 37% calories from protein will help achieve higher protein targets in CI patients and is well tolerated.
Disclosures: Formula provided by Nestlé Health Science.

Mealtime management video is perceived to be a useful education tool for staff working in long-term care

Roseann Nasser[*1], Sabrina Bovee[1], Allison Cammer[2]. [1]Nutrition and Food Services, Regina Qu'Apppelle Health Region, Regina; [2]College of Pharmacy and Nutrition, University of Saskatchewan, Saskatoon, Canada [R]*
Introduction: The Regina Qu'Appelle Health Region with its affiliate, the Regina Lutheran Home, created an educational video to enhance the training and education for all new and experienced long-term care (LTC) staff on mealtime management. The purpose of this study was to determine if LTC staff perceived the video to be a useful training tool.
Methods: An email invitation was sent to the Dietitians of Canada Gerontology Network inviting dietitians to participate. A validated 27-item questionnaire was used with permission in order to assess learning, satisfaction, and clinical expereince related to the video. Dietitians were asked to show the video to the LTC staff and have staff complete the questionnaire.
Results: A total of 766 surveys were completed by staff at 28 LTC homes across Canada. The majority of participants worked in their positions for greater than 5 years and were primarily care aides (30%, n = 223/743), food service workers (15%, n = 111/740) and nursing staff (14%, n = 104/743). Seventy-one percent (n = 520/737) of participants felt more knowledgeable after viewing the video and 80% (n = 590/739) found the video format made learning about mealtime management easy. Viewing the video caused 89% (n = 655/734) of participants to reflect on their resident assessment skills and mealtime management and 73% (n = 559/764) would recommend this video to others.
Discussion: The results suggest that staff perceive the video to be beneficial to their work with residents living in LTC homes. Dietitians should consider using this video as part of in-services for mealtime management with all staff.

Changing nutrition care in Canadian hospitals

Heather Keller Schlegel-University of Waterloo Research Institute for Aging, Celia Laur University of Waterloo, Renata Valaitis University of Waterloo, Bridget Davidson Canadian Malnutrition Task Force, Canadian Nutrition Society, Donna Butterworth, Concordia Hospital, Roseann Nasser Regina Qu'Appelle Health Region, Suzanne Obiorah The Ottawa Hospital, Mei Tom, Alberta Health Services [R]*
Purpose: Malnutrition occurs in almost 1 in 2 patients admitted to medical and surgical units in Canada. Detection, prevention (of iatrogenic malnutrition) and treatment of malnutrition in hospital continue to be elusive. The purpose of this presentation is to describe the **I**ntegrated **N**utrition **P**athway for **A**cute **C**are (INPAC) and how it is being implemented and evaluated in the More-2-Eat project.
Content: INPAC is an evidence-informed, consensus- based algorithm that recommends a two-step process for detection of malnutrition in adult patients using screening and Subjective Global Assessment. Post detection, patients are triaged to one of three pathways: 1) Standard Nutrition Care for those not at risk to ensure that food intake is promoted; 2) Advanced Nutrition Care strategies for malnourished patients (SGA B) who need more nutrition and closer monitoring of intake; or 3) Specialized Nutrition Care for those malnourished patients who require individualized diet prescription and/or the support of a nutrition care team.
Project Summary: The More-2-Eat study is using mixed methods to develop and evaluate implementation of INPAC in five sites. Sites are using their own systems of care and current resources to implement INPAC steps and best practices. Process indicators are used to evaluate success with implementation.
Recommendations & Conclusions: This innovative program will provide much-needed guidance and examples of how to integrate and sustain best practices for inter-professional nutrition care into hospital unit routines.
Funding provided by Canadian Frailty Network, which is supported by the Government of Canada through the Networks of Centres of Excellence program

A literature review of current research on Post Bowel Resection Diets (PBRD)

Mohamed Rezk, RD. Re-Direct Nutrition Counselling Inc, Toronto, Ontario. [E]*
Purpose: (1) To raise awareness towards current research on post bowel resection diets (PBRD). (2) To provide recommendations to Registered Dietitians (RDs) working in Canadian hospitals on the most effective PBRDs in reducing length of stay (LOS) and recovery period.
Process or Content: A comprehensive literature review was completed on PBRD after noticing that there was no unified policy in Canadian hospitals on PBRD. Furthermore, most hospitals administer a "digestive", "soft" or "low-residue" diet that eliminates high fat and complex carbohydrate foods. Instead the diets focus on clear liquid immediately post op with a transition to easy-to-digest foods such as simple carbohydrates. Administration of diets and transitions vary from one hospital to the other and ranges from 2 to 8 weeks. Factors such as type of surgery (laparoscopic or open), presence of

ileus and complexity of surgery affects the length of PBRD depending on the hospital.

Project Summary: Results from the literature review, which included some randomized controlled studies, suggested that early oral feeding using a low residue diet high in complex carbohydrates, proteins and good fats (omega 3s) reduced the LOS of patients, improved recovery period and increased overall food intake in patients. Furthermore, the mouse study displayed a significant effect between a high fat diet (omega 3s) and an increase on intestinal villous growth.

Recommendations & Conclusions: It is recommended that new guidelines be established for PBRD that are low residue but high in protein, complex carbohydrates and good fats (omega 3s) in order to improve recovery and decrease LOS for patients undergoing bowel resection surgery.

Effects of protein intake on physical functioning and muscle strengthening, when consumed after an exercise program, in seniors living in residential care

Bushra Hashmi, RD, Sonia Fones, Kinesiologist, Peter Holbrook, Kinesiologist[R]

Objective: To determine if seniors living in care homes can delay the progression of age related muscle loss with exercise and adequate amount of proteins, >20 g, when consumed after an exercise session.

Method: A twelve week study, (N = 13) was conducted in seniors (73–105 y). The inclusion criteria in the study were adequate cognitive function to follow exercise directions and a renal function of GFR > 30. A 2-day/week, resistive, seated exercises program was conducted by Kinesiologists. The participants were randomly assigned to receive a protein shake, with 39 g of whey protein isolate, or a placebo effect drink after each session. The initial measurements were taken for hand grips, timed up and go, and five times sit to stand, and compared with the measurements taken after the twelve week time period.

Results: In the Sit to Stand test control group showed a mean decrease in time of 2.89 (SD = 6.42) seconds and the treatment group showed an increase of 3.68 (SD = 5.17) seconds to complete the test. In the timed up and go the control group increased time by 0.252 (SD = 9.9) seconds and the treatment group increased time by 1.63 (3.56) seconds. For grip strength control group showed a mean improvement of 2.72 lbs (SD = 8.25) in their right hands and a mean improvement of 0.6 lbs (SD = 2.02) in their left hand. The treatment group showed a mean decrease of 2.075 lbs (SD = 8.31) in their right hands and a mean decrease of 0.44 lbs (SD = 4.62) in their left hands.

Conclusion: Based on our sample size (N = 13) and intersubject variability, we were unable to show any statistical difference in the control or the treatment group. However, looking at individual results, subjects in the treatment group showed more improvements in one or all three measures compared to individuals in the control group.

COMMUNITY-BASED NUTRITIONAL CARE

Demand for registered dietitian services for nutritionally vulnerable children not being met in London, Ontario

Susan Bird MScFN (c)[1], Cathy Verkley RD[2], Janet Madill PhD, RD[1], Colleen O'Connor PhD, RD[1], [1]Food & Nutrition, Brescia University College, London, ON; [2]Revera Home Health Services, London, ON [R]*

Objectives: Observations indicate community registered dietitian (RD) accessibility for the pediatric population (aged 0–5 years) is limited with referrals commonly rejected in London, Ontario. The objectives of this research were: 1) to quantify the disparity between pediatric patients able to access RDs and those who are not, 2) identify the most common reasons for RD referrals, and 3) explore the impact of RD accessibility on health care professionals' (HCPs) practices.

Methods: Six children agencies and twenty pediatricians were asked to record requested and recommended RD referrals for eight weeks. Requested referrals were tracked for acceptance or denial and recommended referrals were presumed denied. Referrals were categorized to determine the most frequent nutritional concerns. HCPs completed a questionnaire regarding the impact of RD services for their practice and their patients.

Results: Two children agencies and nine pediatricians participated in data collection. Results revealed 50% (10/20) of requested and 90% (91/101) of recommended and requested referrals for RD consultation were denied. Data can be extrapolated to presume 300–545 children in London, Ontario are denied access to community dietetic services on a yearly basis. Frequently cited reasons for RD referrals: feeding issues (31%; 50/160), failure to thrive (23%; 37/160), and general infant nutrition (14%; 22/160). The majority of HCPs (72%; 13/18) found community RD services difficult to obtain for their pediatric patients. HCPs also conveyed that inaccessibility is challenging with 88% (15/17) stating it affects their practice and/or their patients.

Implications and Conclusions: This research provides convincing evidence a major gap exists in RD accessibility for pediatric patients. Alarming numbers of children with feeding issues, failure to thrive and general infant nutrition concerns were denied access to RDs in the community, despite a need identified by health professionals. Future research should uncover barriers to community RD accessibility and explore potential solutions.

Parental perceptions of the importance of access to registered dietitian services in the community for children with nutritional needs

Colleen O'Connor PhD, RD[1], Susan Bird MScFN (c)[1], Cathy Verkley RD[2], Janet Madill PhD, RD[1]. [1]Food & Nutritional Sciences, Brescia University College, London, ON; [2]Revera Home Health Services, London, ON [R]*

Objective: Observations, preliminary research, and concerns from pediatric health care providers indicate that registered

dietitian (RD) accessibility for the pediatric community is limited in London, Ontario. Referrals for RDs are frequently rejected, leaving parents with few options for nutrition care. The objective was to explore parental concerns regarding access to community RD care for their children with identified nutrition-related problems.

Methods: Parents with children (aged 0–5 years) who received community RD support were invited to participate in focus group interviews to explore their health care experiences. An interview guide with five questions was created to direct the sessions, and were tested for clarity and understanding. The interviews were audio recorded and transcribed verbatim and the transcriptions were analyzed, coded and categorized for emerging themes.

Results: Five themes emerged from the five parents interviewed: 1) Frustration, 2) Fear, 3) Need for community service, 4) RD's unique skills, and 5) Value of communication. Parents felt adequate access to community dietetic support was critical to resolving their children's health issues. The following quote in particular emphasizes the importance of community dietetic services: "*RD services are not optional, it's a specialty for a reason, these services shouldn't be denied. When you're in the thick of it and feel like every day really matters on whether your child's going to live or not, you don't want to wait, you want to see someone who understands our experience and I couldn't be more grateful.*"

Implications and Conclusions: The results provide convincing evidence of the importance of RD accessibility for nutritionally vulnerable children in the community. Parents have expressed frustration when unable to access RD community services, despite the proven unique, specialized and valuable expertise that RDs provide. Further research should include the impact of RD inaccessibility on parents in the community, and on solutions to improve access.

Perceptions of body image and food choices among rural and urban baby boomer women

N Hawrylyshen[*1], *C Lengyel*[1], *C Marshall*[1], *L Martin*[1], *A Utioh*[2], *R Irvine*[2]. [1]*Department of Human Nutritional Sciences, Faculty of Agricultural and Food Sciences, University of Manitoba, Winnipeg, MB;* [2]*Food Development Centre, Portage la Prairie, MB [R]*

Objectives: 1) Examine body image perceptions, weight attitudes, and eating behaviours of baby boomer women (individuals born between 1946–1965) residing in Manitoban rural and urban communities; 2) Examine how factors influence food choices and preference for local, organic, and functional food products among this group.

Methods: A total of 1083 completed the online survey (completion rate = 87%). The survey was a blend of multiple choice, open-ended and visual analog scale questions. Indigenous respondents made up 5% (n = 49) of the sample. Participants consisted of 49% young baby boomer women (born between 1956-1965) and 51% older baby boomer women (born between 1946-1955), of which 62% were urban dwelling and 38% lived in rural areas. Mean age was 60 ± 5.3 years and the majority of participants (66%) identified as legally married.

Results: Over half of participants (55%) were moderately to very dissatisfied with their current body weight and 47% were moderately to very dissatisfied with their overall appearance. Forty-one percent of rural participants were worried about the impact of aging on their overall appearance compared to 50% of urban dwelling women (χ^2 = 8.94, df = 2; p = .011). For participants wanting to lose weight (n = 980), within the past year, 69% at least sometimes altered their food intake in an effort to lose weight and the average desired weight loss was 30 pounds.

Implications and conclusions: The findings will assist dietitians and other health care professionals in understanding their role in addressing the unique attitudes and behaviours older women have with respect to body image and diet. This information will provide evidence-based support for nutrition programs targeted toward aging women regarding topics such as nutrition, food choices, and positive body image promotion. Findings from this research could be used by the food industry to develop products for this cohort of women.

DETERMINANTS OF FOOD CHOICE, DIETARY INTAKE

The effect of a percent daily value for sugar on consumer perceptions and consumption intent

S. Potvin[*1], *K. Parsons*[2], *N. Savoie*[1], *J. Hovius*[3]. [1]*Dairy Farmers of Canada, Montreal, Quebec;* [2]*School of Dietetics and Human Nutrition, McGill University, Canada Montreal, Quebec, Canada;* [3]*Research Management Group, Toronto, ON. [R]*

Context: The Nutrition Facts table (NFt) is a useful tool for Canadian consumers to make informed food choices. Health Canada has proposed changes to sugar information, more specifically, adding a % Daily Value based on a DV of 100 g for Sugars, potentially affecting consumer choices.

Objective: To assess how perceived sugar content and consumption intent of plain 1% milk, flavoured yogurt and unsweetened frozen fruit are influenced by % DV based on a DV of 100 g for Sugars or Total Sugars (g) in nutrition labelling, and how perceptions differ between these items.

Methods: Internet-based Omnibus questionnaires were completed in two phases by 5965 Canadian adults (≥18 years) between July 23 and August 21, 2015.

Results: The inclusion of a % DV for Sugars increased perceived sugar content of milk, frozen fruit and yogurt by 7%, 6% and 5%, respectively. For the same label, consumption intent significantly decreased for milk by 10% and increased for yogurt by 5%, but did not impact frozen fruit. Alternatively, a label worded Total Sugars for the same DV had no impact on milk or frozen fruit, but increased consumption intent of yogurt by 6%.

Implications & Conclusion: The negative impact on perceived sugar content of milk, frozen fruit and yogurt suggests

that including a % DV for Sugars on nutrition labels may discourage consumption of nutritious foods containing intrinsic sugars, potentially resulting in unintended consequences on intake of other nutrients. However, the term Total Sugars may mitigate these effects. Therefore, a % DV based on 100 g for Sugars may be misinterpreted by consumers, thus careful monitoring and education would be warranted.

DIETARY ASSESSMENT

Dietary intake of DHA and EPA in a group of pregnant women in the Moncton area

Nicole Arsenault Bishop, Université de Moncton, Caroline P. LeBlanc, Université de Moncton [R]*

Purpose: To compare docosahexaenoic acid (DHA), eicosapentaenoic acid (EPA) and fish intake of pregnant women at 30 weeks of gestation to current recommendations and to determine the factors associated with omega-3 (ω3) intake.

Methods: A food frequency questionnaire was completed by 54 women at 30 ± 0.8 weeks gestation. Supplement intake, socio–demographic characteristics and ω3 food habits were also evaluated.

Results: Among this high socio-economic status (SES) group, 66.7% and 64.8% met the Food and Agriculture Organization of the United Nations (FAO)/World Health Organization (WHO) recommendation of 200 mg/d DHA and 300 mg/d DHA+EPA, respectively, and only 48.1% met the Academy of Nutrition and Dietetics (Academy) recommendation of 500 mg/d DHA+EPA. 18/54 women took a ω3 supplement during the third trimester. This significantly improved their total intake to meet the FAO/WHO (88.9% ≥200 mg/d DHA and 94.4% ≥300 mg/d DHA+EPA) and the Academy (77.8% ≥500 mg/d DHA+EPA) recommendations. Among non-supplement users (36/54), 50% met the FAO/WHO recommendations and only 33.3% met the Academy recommendations.

Recommendations & Conclusions: Results suggest that the majority of high SES women did not meet ω3 recommendations from food alone. Continued prenatal education on the importance of fish intake and on the addition of ω3 supplement is essential.

DIETETIC PRACTICE AND EDUCATION

Supporting parenteral nutrition education for dietitians and dietetic interns at Vancouver General Hospital (VGH)

E. Cabrera[1], T. Cividin *[2], M. Radhakrishnan[3], [1,2,3]Vancouver General Hospital, Vancouver, BC [E]*

Purpose: To implement an online parenteral nutrition (PN) module and mentoring process to support dietitian and intern learning and practice.

Process: In order to practice PN in BC, dietitians must meet the College of Dietitians of BC competency requirements to register for this practice. At VGH, we have approximately 20 PN patients per day distributed across the hospital. As we do not have a hospital-wide PN support team, many dietitians must be able to practice PN competently and safely. Historically an annual dietitian-led PN workshop was used to educate interns and new dietitian hires. With ongoing staffing changes, this approach of in-person learning was not meeting needs in a timely, efficient manner. To better address this, an online PN module was developed. The module was piloted by experienced and novice dietitians. Their feedback was incorporated and the course was finalized and posted on the health authority online course system. To date, 35 interns and dietitians have completed the module. To augment the module, a process was setup whereby dietitians are mentored and supported by PN resource dietitians who review the first 15 assessments to ensure safe practice. Each novice dietitian documents the number of completed PN assessments and submits this yearly to the practice leads.

Project Summary: The PN module was low cost to develop and offers immediate, easy access allowing for self-paced learning for dietitians and interns. This, along with the mentoring process was successfully implemented at VGH enabling safe and competent PN practice.

Recommendations & Conclusions: We plan to use this approach for educating dietitians and interns to support competent and safe practice with home tube feeding discharge teaching.

Characteristics of rural adults from Tavistock and Stratford with a diagnosis of prediabetes

Adrienne Vermeer[2], Sarita Azzi[1], Teresa Barresi[2], Sean Blaine[2], Isabelle Giroux[1]. [1]University of Ottawa, Ontario; [2]STAR Family Health Team, Tavistock Ontario [R]*

Background: Rural adults have unique environmental and social factors influencing their lifestyle and contributing to an increased disease burden. To address those specific needs, a healthy lifestyle intervention was offered to rural adults with a prediabetes diagnosis through the STAR Family Health Team.

Objectives: To assess baseline characteristics of rural adults diagnosed with prediabetes, including demographic, anthropometric, dietary and lifestyle information. To check for differences between lifestyle intervention and control participants in these aspects.

Methods: Baseline data collection was identical for both groups. Eighty-three (n = 83) rural adults were asked to fill in a demographic questionnaire, 3-day food record and short 7-day International Physical Activity Questionnaire. Anthropometric measures were also taken. To compare lifestyle intervention and control participants, Student's t-tests were performed.

Results: Rural adults referred to the lifestyle intervention program were 44–79 years old, the majority were Caucasian (97.6%) and 54% were men. Education levels varied; 48.2% had a high school degree or less. They were overweight or obese (94.0%) and more than 9 out of 10 presented abdominal obesity. When comparing lifestyle intervention and control

participants, few differences were observed. Lifestyle intervention participants reported higher household income ($p < 0.001$) and a larger proportion had ≥1 co-morbidity (67.3% vs 29.4%, $p < 0.001$). No significant differences were observed in their average daily macronutrient intake nor in the amount of time spent doing physical activity, although lifestyle intervention participants reported spending more time sitting on weekdays (438.9 ± 224.8 minutes vs 345.6 ± 219.7 minutes, $p = 0.02$).

Implications & Conclusions: Adults referred to the prediabetes program presented important risk factors known to increase health risks that need to be addressed in order to reduce the disease burden in rural areas. Differences observed between lifestyle intervention and control participants could explain in part the decision to actively engage in the 6-month lifestyle intervention program. (Funded by Public Health Agency of Canada).

A necessary evil? Patients' experiences receiving tube feeding in acute care

Cara Green, MHS(c), RD, Athabasca University, Dr. Virginia Vandall-Walker, PhD, RN, Associate Professor, Athabasca University[R]*

Objectives: Tube feeding (TF) for adults admitted to acute care is frequently prescribed for preventing or ameliorating malnutrition, yet little is known about patients' needs and experiences with receiving this therapy. Patients' perspectives regarding the factors influencing their experiences and their information and support needs are required to inform Dietitians' patient-centered practices.

Methods: Based on an Interpretive Description qualitative approach, 12 unstructured, face-to-face interviews were conducted with participants admitted to acute care hospitals in North Western Ontario, Canada.

Results: Findings revealed variations in participants' perceptions of the ***NECESSITY*** for TF and the ***DISCOMFORT*** resulting from this therapy. Perceived ***NECESSITY*** was influenced by inter-related themes: a) the additional ***Meaning*** of TF (beyond *NECESSITY*), b) the ***Trust*** held in Dietitians and Health Care Providers, and c) participant ***Resilience*** in response to all they were experiencing. Collectively, these findings are encompassed within the central theme phrased as a question about the experience of TF as: ***A NECESSARY EVIL?*** Participants' answers to this question revealed the nature of their overall response (i.e. *indifferent, resistant, relieved, tolerant*) throughout TF therapy.

Implications & Conclusions: The range of perceptions and the complexity of patients' experiences during TF revealed in the data, can inform Dietitians' patient-centered approaches to TF care. By assessing and incorporating patients' values, beliefs, needs, and goals into, and exploring choices in, nutritional care planning, resilience in response to TF therapy can be promoted. Dietitians then, may well enhance both comfort and the overall experience with TF therapy.

EDUCATION, TRAINING, AND COUNSELLING

The Dietitian Coach: Coaching for sustainable health and eating practices in a growing multicultural and global society

Phyllis Reid-Jarvis [E]

Purpose: This presentation will share with delegates the far reaching benefits of incorporating coaching principles into the practice of dietetics [1]. For healthcare providers clients often present with certain viewpoints/beliefs about the state of their health [2, 3].

The challenge with working in an ever growing multicultural and global society is that views and beliefs about health, foods, food production and preparation and eating are as varied as there are people on this planet [4].

Process or Content: The IDARE Coaching Framework© is a structured approach to incorporating the principles and tools of coaching into the daily work practice of healthcare providers. Participants are shown how The IDARE Coaching Framework© is used to help clients identify what they believe and value most and how to transfer this into appropriate sustainable actions.

Project Summary: The coaching approach is a natural extension and augmentation of learning principles. This unique approach allows coaching and the practice of dietetics to create a space designed for clients' utmost learning and growth. This allows for *better facilitating clients' to contribute positively to their full professional, personal and economic potentials.*

Recommendations & Conclusions: The coaching approach delivers desired results. It is a proven style that best equips the Dietitian Coach to work with clients to develop sustainable health practices. It is a recommended approach for Dietitians working with diverse groups of clients. Whether clients' diversity is based on religious, geographic, sex, social or cultural mores; the coaching approach prepares Dietitians to engage in an approach that when added to dietetics truly enhances its efficiency as a tool for use in the health system. The application of key coaching principles coupled with dietetics makes the practice of dietetics truly having a more global reach and impact [5].

REFERENCES

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NUTRITION AND HEALTH EDUCATION

Prevalence and Management of Enteral Nutrition Intolerance beyond the ICU

Janet Madill, PhD, RD Assistant Professor, Brescia University College Western University, London ON. Bethany Hopkins MEd, Medical Affairs Manager, Nestle Health Science Canada,*

Davis B, BSc, MScFN candidate Brescia University College Western University London, On[R]

Background: Enteral nutrition intolerance (ENI) is described as one or more gastrointestinal (GI) symptoms that may interfere with delivery of enteral nutrition (EN). ENI is reported to affect patient quality of life (QOL) and reduce EN volume delivered, which may result in nutrition deficits, dehydration and malnutrition. Literature exists regarding ENI in the critical care setting, however, little is known about ENI outside the ICU.

Objective: To investigate the prevalence and management of ENI in non-ICU settings in Canada.

Methods: An on-line survey was administered to registered dietitians (RDs) working in acute care (AC) long-term care (LTC), and home care (HC) settings across Canada. Respondents were recruited via convenience sample, with the following inclusion criteria: practicing RDs for ≥ five years and consulting on ≥ three-five EN patients/month. Descriptive analysis were used to compute frequencies; one way ANOVA with Tukey's for continuous variables, chi-square for categorical, using SPSS v 21, significance denoted as $p < 0.05$.

Results: 488 RDs met the inclusion criteria, 240 completed the survey (100 AC; 80 LTC; 60 HC), recalling information on 5611 EN patients managed in the preceding three months. Between 35%–66% of patients had ≥ one GI symptom, with diarrhea the most prevalent reported across care settings (AC 27%; HC 20%; LTC 15%) [$p = 0.001$]. Symptoms of reflux, fullness, nausea and bloating were more prevalent in HC patients [$p < 0.05$]. Across all symptoms and care settings, reducing EN volume was a common management approach (28–57%).

Conclusion and Implications: ENI is common among tube fed patients in AC, LTC and HC settings, with implications for nutrition delivery, malnutrition risk, and patient QOL. Further research is recommended to validate these findings and to develop clinical practice guidelines to manage ENI, particularly given recent publications which call attention to malnutrition prevalence in Canada.

Canadian health professionals' understanding of sugar's functional roles in foods

CL DiAngelo, F Wang, L Pasut, SL Marsden. Nutrition Information Service, Canadian Sugar Institute, Toronto, ON [R]*

Objectives: The presence of sugar (sucrose) in food products has garnered both media attention and calls from health groups for reformulation to reduce the added sugar content of foods. However, sugar contributes important sensory, microbial, chemical and structural properties to foods, in addition to providing sweetness. To reduce sugar but still maintain a product's consistency and texture, other Caloric ingredients (e.g. starches, polydextrose, gelatin) are often added, which may not reduce the total energy content of the foods. Therefore, the objective was to assess health professionals' understanding of the functional roles of sugar in foods and to identify knowledge gaps.

Methods: A total of 377 health professionals (44% were dietitians) voluntarily completed questionnaires at two Dietitians of Canada conferences and the International Diabetes Federation Conference in 2015.

Results: Although many respondents understood some of sugar's functions, only a small proportion (ranging from 15% to 26%) were able to identify all the roles it performs in three types of food products (baked goods, tomato-based sauces, and ready-to-eat breakfast cereals). Dietitians were slightly more likely to answer correctly (ranging from 21% to 38%). Proper rise of the dough in baked foods, surface porosity improvement in cereals and the browning process in tomato-based sauces were among the least known functions of sugar, whereas flavour was most frequently known for each. Interestingly, almost half (40%) of the respondents recognized that products with the claim "reduced in sugar" are not always lower in Calories compared to products not "reduced in sugar", yet very few (3% overall and 5% among dietitians) could correctly identify the three major Caloric replacement ingredients.

Implications & Conclusions: Several knowledge gaps were identified among health professionals with respect to sugar's functional roles in foods that go beyond sweetness. The development of continuing education resources addressing these gaps may be helpful.

Food Literacy Competencies for Youth: A Delphi Study

Joyce Slater, RD, MSc, PhD Department of Human Nutritional Sciences, Faculty of Agricultural and Food Sciences, University of Manitoba, Thomas Falkenberg, PhD Faculty of Education, University of Manitoba[R]*

Objective: The global shift to diets high in ultra-processed foods has seen a concurrent decline in time spent on domestic food-related activities and a "deskilling" with respect to food and nutrition. Consequently, many youth lack the food literacy (knowledge, skills and critical perspectives) necessary to maximize their food well-being, in the context of a complex food system. The specific dimensions of these knowledge, skills and dispositions, however, are unknown. This study identified critical food literacy competencies required by youth as they transition to independent adulthood.

Methods: This study employed a Delphi methodology. A panel of 41 experts including dietitians, home economics/social studies/physical education teachers, and senior nutrition and culinary arts students participated in in-depth interviews and two surveys. Interview results were thematically analyzed and incorporated into two subsequent surveys completed by panel members. Survey results were analyzed for means and Kendall's coefficient of concordance was used to assess rater agreement. A panel sub-group further refined results.

Results: A wide-ranging scope of competencies emerged, categorized into themes of "confidence and empowerment", "joy and meaning" and "sustainable and equitable food systems". Eighteen broad competency areas were identified such as "having food preparation skills". Sixty-two specific

competencies were identified such as "being able to read/follow a recipe". These were assembled into a Food Literacy Framework for Young Adults.

Implications & Conclusions: Results can be used to support food and nutrition education in community settings as well as the formal school system. Results can also be used to advocate for resources to support food literacy education programs.

Evaluation of glycemic index education in people living with type 2 diabetes mellitus: Participant satisfaction, knowledge uptake and application

S Grant[*1,2,3], T Wolever[2,3,4,5], R Josse[2,4,5], D O'Connor[2,6], A Thompson[7], M Seider[2,3], R Noseworthy[2,3], A Glenn[2,3], M Sobie[8], G Bhatti[9], J Cavanagh[10], E Elliott[11], P Darling[2,12]. [1]Department of Applied Human Nutrition, Mount Saint Vincent University, Halifax, Nova Scotia; [2]Department of Nutritional Sciences, University of Toronto, Toronto, Ontario; [3]Risk Factor Modification Centre, St. Michael's Hospital, Toronto, Ontario; [4]Division of Endocrinology and Metabolism, Department of Medicine, St. Michael's Hospital, Toronto, Ontario; [5]Li Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto, Ontario; [6]Physiology & Experimental Medicine Program, Hospital for Sick Children, Toronto, Ontario; [7]International Breastfeeding Centre, Toronto, Ontario; [8]St. John's Rehab, Sunnybrook Health Sciences Centre, Toronto, Ontario; [9]Heart Healthy Program, Ridge Meadows Hospital, Maple Ridge, British Columbia; [10]West Toronto Diabetes Education Program, LAMP, Community Health Centre, Toronto, Ontario; [11]Adult Diabetes Education Center, Orillia Soldiers Memorial Hospital, Orillia, Ontario; [12]School of Nutrition Sciences, Faculty of Health Sciences, University of Ottawa, Ottawa, Ontario [R]*

Introduction: Use of low glycemic Index (GI) foods is recommended by the Canadian Diabetes Association for managing type 2 diabetes mellitus (T2DM). Notwithstanding, 61% of Canadian Registered Dietitians (RDs), working with clients with DM, do not use GI in practice. These educators highlight the following barriers to utility: Lack of suitable GI-education tools, GI is too difficult for clients to understand and apply, and a need for more GI-utility data from diverse client populations. Although the literature supports that available GI-education materials are unsuitable, there is not enough evidence available to support or refute that GI is too difficult for clients to understand and apply.

Objective(s): To address the lack of data available on GI-education evaluation, a mixed-form questionnaire (GIQ) was developed, pre-tested and used to evaluate an evidence-based GI education platform.

Methods: Participants (n = 29) with T2DM attended a 40 minute GI education session, led by an RD. The GIQ was administered pre-education, immediately post-education, and one and four weeks post-education. Three-day-diet-records were administered pre-education and at one and four weeks post-education.

Results: The primary outcome, dietary GI, was significantly lower at one and four weeks (mean ± SEM; both 54 ± 1) compared to baseline (58 ± 1; $p \leq 0.001$; 4–5 unit decrease). Most study participants (28/29) were satisfied with the education session. Knowledge score significantly increased from pre-education (53.6 ± 5.1%) to immediately post-education (83.5 ± 3.4%; $p \leq 0.001$), one week post-education (87.5 ± 2.6%; $p = 0.035$) and four weeks post-education (87.6 ± 3.8%; $p = 0.011$).

Conclusions and Implications: Our findings suggest that a statistically significant reduction in dietary GI can be obtained using the GI education platform; supporting that clients can understand and apply GI-knowledge and skills. The education and evaluation materials created for this study have addressed the aforementioned perceived barriers to GI utility and may be tested and/or used in other DM populations for which more GI utility data is required (e.g. gestational diabetes mellitus).

NUTRITIONAL ASSESSMENT AND THERAPY

An audit of the nutrition practices provided to inpatients with Inflammatory Bowel Disease in the Saskatoon Health Region

N Haskey, S Brooks, L Schiller, S Sestak. Saskatoon Health Region, Food & Nutrition Services and University of Saskatchewan, College of Pharmacy & Nutrition. [R]*

Objectives: It is well established that patients with inflammatory bowel disease (IBD) are at nutrition risk. Nutrition assessment and intervention are key components of disease management. The present study aimed to 1) identify the current nutrition practices provided to patients with IBD admitted to Royal University Hospital (RUH) within the Saskatoon Health Region (SHR) and 2) compare current nutrition practice to recommendations for nutrition management for IBD in the literature.

Methods: A retrospective chart review was completed on 87 patients admitted to hospital with IBD from January 2013 to November 2015. A variety of demographic, anthropometric, biochemical, nutrition assessment and nutrition intervention data were extracted from the charts.

Results: Only 33% (n = 29) of patients with IBD received a consult to a dietitian, despite suboptimal oral intake being reported in 77% of patients (n = 58). Twenty-three (85.2%) of the dietitian assessments were completed within three days of receiving a consult. In 87 patients, weight (97.7%), height (96.6%), % weight change (83.9%) were monitored, however BMI was calculated only 26.4% of the time. Less than 40% of patients received appropriate nutrient supplementation (e.g. vitamin D or calcium) during admission.

Implications & Conclusions: This audit identified that there is a gap between what is recommended in the literature for IBD and what is occurring in practice. Creation of a clinical nutrition pathway to standardize care to the patient with IBD is proposed. Education and training of the health care team about nutrition management for IBD is also needed.

Enteral nutrition formula selection practices across care settings – results of a Canadian survey

Cindy Steel RD - Nestlé Health Science, North York, ONHeather Wile MA, RD - Nestlé Health Science, North York, ON [R]*

Over 30 enteral nutrition (EN) formulas are available to Canadian clinicians, with varying caloric densities and differing amounts and sources of macronutrients, micronutrients and fibre. Little is reported about features registered dietitians (RD) consider when choosing an EN formula.

Objective: To understand and benchmark the relative importance of formula features in the selection of EN formulas.

Methods: A convenience sample of 3440 RDs who provide direct client nutrition care, in acute care (AC), long-term care (LTC), and home care (HC) settings across Canada were invited by email to complete an on-line, six question survey of EN formula selection practices. Respondents ranked the importance of 11 composition and 10 non-composition features when choosing standard and specialty EN.

Results: Nationally, 516 surveys (15% response) were completed; 52% from AC, 27% HC, 19% LTC and 2% other. In all care settings, composition features (both standard and specialty EN) of protein amount (g/L) and caloric density (kcal/mL) ranked as first or second in importance, more often than other features (CI = 95%). Source of protein was ranked third overall. The lowest ranked composition features were source of carbohydrate, fat and fibre. There was more variability in ranking for non-composition features. Open/closed format ranked in the top three for all care settings regardless of standard or specialty EN. Formula tolerance history ranked in the top three for standard EN formulas. Clinical evidence ranked in the top three for AC, so too did Health Canada approval in LTC, and provincial reimbursement in HC. Overall, the lowest ranked non-composition feature was cost-effectiveness.

Implications and Summary: Dietitians consider amount of protein and caloric density as the most important features for formula selection. Cost-effectiveness and source of nutrients, other than protein, ranked as least important. Results suggest registered dietitians consider the nutrition needs of their clients above other factors when choosing an EN formula.

Adult experiences with nutrition mobile apps for weight management

Lieffers JRL, Arocha JF, Hanning RM School of Public Health and Health Systems, University of Waterloo, Waterloo, ON [R]*

Objective: Nutrition mobile apps (e.g., for behaviour self-monitoring) have become popular weight management tools. However, little is known about real-world user experiences with these apps and what users would like to see in future tools. The purpose of this project was to understand real-world experiences of adults accessing nutrition mobile apps for weight management.

Methods: Twenty-four adults (n = 19 females, n = 5 males), who had used publicly available nutrition mobile apps for weight management for at least one week within the past three months, were recruited to complete an in-person one-on-one semi-structured interview. Recruitment took place in southern Ontario (including Kitchener-Waterloo, Toronto) and Edmonton, Alberta, using different methods (e.g., social media, posters, word of mouth). Interviews were transcribed verbatim and data were coded, and organized into categories using NVivo v10 (QSR International, Doncaster, Australia).

Results: Interviews were on average >58 mins. Participants used a variety of nutrition apps almost always without health professional support. MyFitnessPal® (MyFitnessPal LLC, San Francisco, CA) was the most popular. In the interviews, five categories of experiences became apparent: (a) data entry (e.g., food database, food data entry methods, food portion size, entry of complex foods, other data entry); (b) accountability, feedback, and progress (e.g., goal setting, monitoring); (c) technical and app-related factors (e.g., slow app loading time); (d) personal factors (e.g., self-motivation, privacy, knowledge); and (e) obsession. Participants provided several suggestions, e.g., for improved food data entry and feedback, which may be helpful for future apps.

Implications and Conclusions: Nutrition self-monitoring mobile apps have emerged as a popular adjunct to weight management. Several factors can affect the use of such apps, and whether users adhere to regular nutrition self-monitoring. In some cases, users became obsessed with their use. Dietitians have an important role in guiding appropriate use. (Funding: Canadian Foundation for Dietetic Research)

OTHER

Nutrition care practices for residents with dementia in urban and rural long-term care: Perspectives of care aides

Allison Cammer, PhD(c), RD, College of Pharmacy and Nutrition, University of Saskatchewan, Saskatoon, SK Susan Whiting, PhD, College of Pharmacy and Nutrition, University of Saskatchewan, Saskatoon, SK Debra Morgan, PhD, RN, CCHSA, College of Medicine, University of Saskatchewan, Saskatoon, SK [R]*

Purpose: Dementia is the top chronic condition necessitating relocation to long-term care (LTC). Physiological changes can negatively impact nutritional intake, while behaviour changes can increase nutritional needs, contributing to a higher risk for malnutrition and adverse health outcomes. Nutritional health of LTC residents with dementia is central to quality care and quality of life. The majority of direct resident care in LTC is performed by care aides with limited training in nutrition and dementia who rely on task-specific care processes. This qualitative research explored best practices in nutrition care for residents with dementia from the perspective of care aides.

Methods: Four LTC homes participated in this project, 2 urban and 2 rural. Care aides were invited to participate via

posters circulated at each of the participating LTC homes. Two focus group discussions were conducted with care aides at each of the LTC homes, for a total of 43 care aides participating in 8 focus group discussions. Discussions were audio-recorded and transcribed. Data analysis was performed according to framework analysis, with attention to difference between urban and rural location.

Results: Findings were organized into 6 thematic areas: balancing residents' care needs, experiential learning, operationalizing person-centered care, coping strategies, competing demands, and perception of nutrition care. Each thematic area encompasses aspects of the LTC environment that directly influences nutritional care performed by care aides.

Implications: Multiple factors impact nutritional care practices within LTC. These findings indicate a strong need for RDs in supporting nutrition care for residents with dementia in LTC; enhanced training, greater coordination of nutrition care, supportive supervision, and adaptive mentoring may help care aides in performing nutrition care for residents with dementia. As well rurality is a relevant factor to consider when planning interventions or quality improvement initiatives.

Food, faith and justice: a study of Baha'i dietary discourse

Paul Fieldhouse [R]*

Objective: To identify and describe the food-related beliefs and practices of Baha'is. To test the claim that food provides a practical way through which Baha'is can articulate and achieve their ethical goals as they seek to live out the principles of justice and unity that are central to their faith.

Methods: A dual methodological approach combines hermeneutic strategies to examine Baha'i sacred texts with qualitative interviews of a sample of Baha'i families in Winnipeg, Manitoba, to explore food and faith issues related to health and healing, hospitality, social development, and spiritual duty.

Results: Dietary laws that are characteristic of older world religions are largely absent in the Baha'i Faith. But while food does not at first appear to be a prominent issue in the Baha'i tradition, findings indicate that there is a singular food discourse that evokes spiritual and social themes of simplicity, moderation, commensality and compassion, and which supports the claim that food is integral to, and formative of the Baha'i concept of justice. Vegetarianism, avoidance of alcohol, and fasting are themes that interweave with healing, hospitality and social development including alleviatin of hunger and suffering.

Implications and Conclusions: Using a multi-disciplinary approach to understanding food choice may provide a more nuanced persepctive on the motivations that underlie food choice. Incorporating religio-ethical perspectives may be a useful tool in motivating changes in food consumption in the pursuit of individual health and collective food security.

PATIENT SERVICES

Impact of meal service systems on patient tray waste: A comparison of cold plating system and Steamplicity®

Carmen Kwok, MScFN, RD Ilona Jonus, MBA, RD Dahlia Abou El Hassan, MScFN, RD[R]*

Objectives: Addressing patient tray waste provides an opportunity to enhance sustainability, financial viability and resource optimization. This study compares the impact on patient tray waste between two meal service systems: 1) the *Cold Plating* system, where meals are cold plated on a belt line in the centralized kitchen on site. Patients make selection on a paper menu one day in advance and meals are reheated in rethermalization equipment an hour before service; and 2) *Steamplicity*, where entrees are plated off site and delivered to hospitals multiple times a week. Foodservice staff utilize room service model to collect patients' selection two hours before meal time. Meals are cooked using microwaves in unit pantries and served within minutes after cooking.

Methods: Waste audits were conducted for each system, using direct visual estimation at a 400-bed hospital in Canada. Data was collected for three meals a day for the number of days in the non-select menu cycle for each system. Average cost of food waste per tray was calculated and used for comparison.

Results: A total of 3516 breakfast trays, 3210 lunch trays, and 3196 dinner trays were audited in the *Cold Plating* system; 839 breakfast trays, 864 lunch trays, and 857 dinner trays were audited in *Steamplicity*. The average cost of food waste per tray was lower for all three meals in *Steamplicity* with an average waste cost reduction of \$0.25 ($P < 0.0005$, $d = 3.25$), \$0.49 ($P < 0.0005$, $d = 2.22$), \$0.27 ($P < 0.006$, $d = 1.37$) per tray for breakfast, lunch, and dinner respectively. The average daily waste cost reduction was \$1.01 per patient.

Implications & Conclusions: Findings from this study suggest that the meal service system has a significant impact on patient tray waste. Incorporating waste reduction initiatives in a hospital's quality management system is an effective way to optimize service quality and efficiency in the long term.

A food waste monitoring project in a long term care facility in Ontario

Y. Liu[1], J. Oulton, RD[2]. [1]Internationally Educated Dietitian Pre-Registration Program, Chang School of Continuing Education, Ryerson University, Toronto, Ontario; [2]J. Oulton and Associates, Ancaster, Ontario [R]*

Objective: Many long term care facilities (LTCF) exceed their food budgets. The objective of this study was to develop and test a tool to measure waste as a contributing factor.

Methods: A literature review was completed along with visits to three LTCFs to understand the methods and procedures currently being used for monitoring food waste. The test tool and procedure included measuring the actual weight of food and fluid waste in one dining room with 52 residents over a two-week period. The weight was then captured on an excel

spreadsheet along with the cost of the menu items per serving to determine the actual cost of the food wasted.
Results: The focus of food waste was at the point of service and plate waste. The average daily solid food waste collected was 37.1 kg. The solid waste consisted of unserved food items and solid plate waste from 3 meals (breakfast, lunch and dinner). The average daily fluid waste was 16.6 kg. The fluid waste did not include unserved fluid as unserved fluids did not need to be discarded. Breakfast had the highest fluid waste while dinner had the highest amount of solid waste. Higher waste was noted for the modified texture and therapeutic diets. The monetary loss for the one dining room was estimated around $57,000/year.
Implications & Conclusion: The developed excel spreadsheet and weighted waste indicated that a significant amount of food was wasted in this long term care facility. A major contributor was unserved food which was discarded. Understanding the limitations of extrapolating, the findings across the 3 dining rooms in this facility, suggest an estimated 40% of the annual food budget has the potential of being wasted. The procedure and tools tested worked well in estimating the amount of food waste and impact on the food budget.

RESEARCH METHODOLOGIES

Challenges in recruiting school children and their parents/caregivers to participate in school programs and research/evaluation studies

Noura Sheikhalzoor, M.Sc.(c), RD and Shawna Berenbaum, Ph.D, RD Division of Nutrition and Dietetics, College of Pharmacy and Nutrition, University of Saskatchewan[R]*
This study emerged as part of a larger study when recruitment challenges played a major factor in the larger study's success.
Objectives: 1) To describe the challenges of recruiting school children and their parents/caregivers to participate in school programs and research/evaluation studies. 2) To identify strategies and approaches to prevent and/or overcome these challenges.
Methods: In-depth qualitative interviews were conducted with eight experienced stakeholders about their experiences in recruiting children and their parents/caregivers: school superintendents, school principals, school programing staff, and health researchers in the school system in Saskatoon, Saskatchewan. Interviews were taped, transcribed and analyzed by thematic analysis method.
Results: A key finding was that recruiting parents/caregivers is more challenging than recruiting children for a variety of reasons: written communication is less likely to reach home, families are busy and have other priorities, and families have mistrust and fear of institutions and research. Other challenges included not having transportation to participate, not having enough money to cover costs of participation, and parents/ caregivers perceived self-efficacy. Several strategies were identified including building relationships and trust, providing clear and continuous communication, and using incentives.
Implications and Conclusions: Planners and researchers who recruit in the school system must be prepared for recruitment challenges. Experienced stakeholders have many ideas for helping with recruitment success. Future research should focus on parents' perspectives on recruitment.

UNDERGRADUATE EDUCATION AND DIETETIC INTERNSHIP

A campus nutrition education centre; Student experiences with community benefits

Sally Willis-Stewart, School of Health and Exercise Sciences, Faculty of Health and Social Development, University of British Columbia, Okanagan Campus[E]*
Purpose: The Nutrition Education Center was set up on a university campus for the purpose of providing opportunities for students to gain practical experience in nutrition education, programing, research and health promotion. The second purpose of the centre was to provide credible nutrition information, through various programs and services offered, for the university community as well as the community at large.
Process: With the significant role that nutrition plays in overall health and well being it is of utmost important that people have access to credible, evidence-based information, especially university students who are stressed with limited budget, high exposure to media around food and body, social and academic pressures, and many suffering from disordered eating behaviours. Equally, faculty and staff in a highly demanding work environment, can benefit from the services provided. The goal of the Nutrition Education Center is for practicum and volunteer students in the health and nutrition field to provide resources, consulting and programs, under the supervision, guidance and mentoring from the center director. This experience is invaluable for their education and career aspirations. Students working in the center could include dietetic, human kinetic, nursing and medical students.
Project Summary: Project work and timelines are developed for the successful student applicants in line with their interests, goals and center objectives. Examples of tasks and projects students maybe involved in include daily operations of the center, nutrition consulting, faculty and staff healthy weight program, disordered eating awareness program, nutrition education events for the campus and broader community, research, newsletter writing, campus nutrition tours, and healthy bake sales. The center works closely with Campus Health and Wellness, Human Resources health programming, and the university development office.
Recommendations and Conclusions: The center has become a sought after experience for students and a very valuable resource at many levels of university operations. The success of the center stands to be a model for other universities to adopt, especially those with dietetic degree programs.

VULNERABLE GROUPS AND THEIR NUTRITIONAL NEEDS

Malnutrition prevalence in a large Canadian academic teaching hospital: Results from nutritionDay 2011

Daniela Fierini, Princess Margaret Cancer Centre/University Health Network. Janet Madill, Brescia University College[R]*

Objective: Malnutrition can result from inadequate intake before and during hospital admission leading to poor outcomes and increasing demand for healthcare resources. International nutritionDay (nDay) research identified decreased food intake as an independent risk factor for mortality in hospitalized patients. The objective was to examine malnutrition prevalence at a large academic centre in Canada utilizing nDay nutrition risk indicators.

Methods : A one-day cross-sectional audit at three sites, Site 1: cancer care; Site 2: acute care and Site 3: acute care-neurology, following international nDay protocol. Validated nDay questionnaires were used to collect anthropometrics, medical history, diagnosis, medications and meal consumption. Ethics approval was obtained, patients were consented. Statistical analysis: Categorical variables expressed as percentages. Continuous variables expressed as mean ± SEM. One-way analysis of variance and Student t-tests comparing continuous variables. Significance $P < 0.05$. SPSS v.21.

Results : 264 patients (49% male, 51% female), Site 1:57; Site 2:150; Site 3:57, were recruited. Mean ± SEM weight loss (kg) Site 1: 4.53* ± .677; Site 2: 2.85 ± .375; Site 3: 1.81* ± .509 [*p ≡ .001]. Unintentional weight loss pre-admission was 77*% Site 1; 41*% Site 2; 26*% Site 3 [*p ≡ .001]. During week before nDay, 53% Site 1; 35% Site 2; 39% Site 3 ate less than half their normal amount [p ≡ ns]. On nDay, 51*% Site 1; 40*% Site 2; 42% Site 3 had poor appetite [*p ≡ .005]. On nDay, 68% Site 1; 54% Site 2; 56% Site 3 ate less than half of their meal tray [p ≡ ns]. 47% Site 1; 33% Site 2; 42% Site 3 experienced anorexia, nausea/vomiting, fatigue and food aversions. Furthermore, 2% Site 1; 17% Site 2; 10% Site 3 reported intake was not allowed.

Implications and Conclusions: International nDay nutrition risk indicators including poor food intake is still prevalent in a large academic institution. Thus, screening protocols and appropriate intervention strategies are needed to address this issue.

The Dining Environment Assessment Protocol (DEAP) for use in Long Term Care(LTC)

Natalie Carrier, Universite de Moncton, Habib Chaudhury, Simon Fraser University, Lillian Hung, Vancouver General Hospital, Kaylen Pfisterer, Schlegel-University of Waterloo, Research Institute for Aging, Heather Keller, Schlegel-University of Waterloo Research Institute for Aging, University of Waterloo [R]*

Objective: To describe and present reliability statistics of DEAP. DEAP is used to assess the physical environmental features of a dining area. Safety, security and accessibility are key features of this tool, which was initially developed for LTC environments, specifically for persons with dementia.

Method: With two trained raters, inter-rater reliability was tested in 10 different dining areas in three LTC homes (70% dementia units). Two scales (1 low–8 high) were used to rate home-likeness and functionality of the space in an empty dining room. Intra-class correlation (ICC) was used to determine reliability.

Results: ICC was 0.68 for home-likeness and 0.70 for functionality of the space. Dining rooms had 9.7 ± 1.2 tables (mean ± SD), 19.4 ± 3.5 chairs, 2.6 ± 1.4 stools for staff, and 2.1 ± 0.32 entry/exit ways. Common features of the physical environment were: good contrast between table and dishes (80%); posted menu (100%), accessible washroom for residents nearby (90%); secured kitchen, stove, and non-edibles/detergent (100%); accessible kitchen for residents/family (100%); servery/pass through not accessible for residents/family (80%); dining room open between meals (50%); 50% or more of residents can view gardens from dining area (50%). The following features were relatively uncommon: short distance to bedrooms; dining room visually accessible from bedrooms; accessible beverage service; clock (only in 10%); rounded edges of furniture; adjustable tables (only in 10%); and contrast between the table and floor (only in 20%). Mean score for functionality was 5.3 ± 0.82, while the score for home-likeness was lower at 3.5 ± 1.35.

Implications & Conclusions: The DEAP is the first reliable tool to rate the physical features of LTC dining areas and can assist with enhancing the eating environment. It was subsequently used in the Making the Most of Mealtimes prevalence study to characterize dining areas.

The MealTime Scan (MTS) for Long Term Care (LTC) Homes

Christina Lengyel, University of Manitoba , Habib Chaudhury, Simon Fraser University, Kaylen Pfisterer, Schlegel-University of Waterloo Research Institue for Aging, Heather, Keller, Schlegel-University of Waterloo Research Institue for Aging, University of Waterloo[R]*

Objective: To describe the MTS and its reliability. The physical and social environments in LTC can influence mealtime experience of residents, impacting their food intake and quality of life. The MTS can be used to characterize the psychosocial and physical mealtime environment. MTS is completed during mealtime and includes descriptive components (e.g., luminescence, number of people in dining, care activities etc.) and ratings on a scale (1 low–8 high) for the social environment, person directed care practices (i.e., staff interaction with residents in a dignified vs. task-focused manner) and physical environment.

Methods: Two trained raters completed MTS at three meals for 10 different dining rooms in three LTC homes. Agreement, Kappa and Intraclass Correlation (ICC) were used to determine inter-rater reliability.

Results: Sound was 66.6 db ± 3.7 (mean ± SD); 24.1 persons ± 3.7 in the dining room; and positive to negative person directed care practices was 1.3 ± 0.4. MTS had good reliability for derived scales with ICC ranging from 0.65 (rate what you hear) to 0.85 (negative person directed practices). The mean scores for MTS scales (1 low–8 high on key features) were: social environment (3.7 ± 2.2), person directed care (3.9 ± 2.1) and physical environment (4.9 ± 2.5). Physical environment was rated more positively or was better than the social environment and person directed care practices.
Implications & Conclusions: Overall, MTS is a reliable tool and is useful for describing mealtime environments as experienced by residents. The information will be used enhance the eating environment for LTC residents. It was subsequently used in the Making the Most of Mealtimes prevalence study to characterize mealtimes.

WELLNESS AND PUBLIC HEALTH

The role of the dietitian in the built environment

Kaylee Michnik, Public Health Nutritionist, Regina Qu'Appelle Health Region, Tracy Sanden, Public Health Nutritionist, Regina Qu'Appelle Health Region , Melanie Warken, Public Health Nutritionist, Five Hills Health Region, Stacey Wiens, Public Health Nutritionist, Prairie North Health Region, Cassandra Touet, Public Health Nutritionist, Prairie North Health Region Cathryn Abrametz, Public Health Nutritionist, Prince Albert Parkland Health Region [E]
Presented by Holly Hallikainen*
Purpose: The purpose of the role paper is to summarize current evidence around the impact of the built environment on population health outcomes. This evidence summary can be used to foster support for dietitians to work with primary prevention initiatives; practical examples are provided. The role paper also supports integrated competencies for the nutrition practicum in Saskatchewan.
Process or Content: The authors reviewed the current evidence on health outcomes in relation to the built environment, as well as, the role of dietitians in built environments. Key terms were clarified and the role paper was reviewed by national experts. The final document was released in September of 2015 through the Public Health Nutritionists of Saskatchewan and is now available through the Practice-based Evidence in Nutrition (PEN) database for members to access nationally.
Project Summary: Chronic disease rates continue to rise even with increasing medical interventions. It is not enough to tell people to eat healthy food. Scientific evidence proves that supportive built environments where we live, work, eat, learn, rest and play enable people to make healthy choices. There is an important role for dietitians to work towards healthy food systems which is a part of the built environment. Addressing the built environment pushes beyond a traditional approach to healthy eating and nutrition such as education; it considers a more holistic approach that acknowledges external factors such as the availability and access to healthy food, that influence the food we eat.
Recommendations & Conclusions: The built environment can be planned to enhance an individual's and a community's health by creating places where the default choice is the healthiest option.

Improving fruits and vegetables consumption among Senegalese adolescent girls

Matsinkou Fotso Charlotte, Yergeau Olivier, Blaney Sonia, Sall Mohamadou, Sall Guélaye[R]*
Background: Worldwide, adolescence represents an entry point for the acquisition of healthy eating behaviors. Yet, limited information is available from developing countries on adolescent diet and potential to improve it.
Objective: The purpose of our intenship project was to assess, to analyze and to act in order to improve the consumption of fruits and vegetables (F/V) of Senegalese adolescent girls.
Methods: Using an ecological model through a participatory process, individual factors related to the consumption of F/V were assessed and analysed among a group of 20 adolescents girls (13–15 years) attending a high school in the city of Dakar. Thereafter, the following activities were implemented: 1) information session on the importance of consuming F/V, 2) cooking sessions, 3) visits of the local markets to learn about F/V diversity and prices. To assess the impact of the activities, adolescent knowledge was evaluated using a test administered before and after the information session. Dietary intake was estimated using 24-hour recalls administered over a 3-day period before and after the implementation of the activities. Foods quantities were estimated using local measures or weighted, then analysed with NutriSurvey software.
Results: After 3 weeks of implementation, the evaluation of intake showed an increase in the consumption of F/V which doubled (195 ± 204 to 383 ± 224 g/day). The proportion of adolescents consuming more than 400 g of F/V also rose from 1 to 10 individuals out of 20. The score on the knowledge test improved from 30 to 83.
Implications and conclusion: Our results showed that the use of a participatory process and of a framework to investigate and act on nutrition behaviors was effective in increasing total F/V intake among adolescent girls possibly through acquisition of new knowledge on the benefits of F/V. Further studies are needed to corroborate our results and to determine the sustainability of our intervention.

The role of anti-inflammatory and pro-inflammatory foods in asthma: a population based study

T McComber[1], C Revie[1], J Taylor[2], W Montelpare[2], P Veugelers[3]. [1]Department of Health Management, Atlantic Veterinary College; [2]Department of Applied Health Science, University of Prince Edward Island, [3]School of Public Health, University of Alberta[R]*
Objectives: Asthma is among the most common chronic conditions in childhood. There is growing evidence that diet plays a role in the development of asthma: consumption of

anti-inflammatory foods/nutrients (AIF) has been associated with decreased asthma rates while consumption of pro-inflammatory foods (PIF) is associated with increased rates. The objective of this study was to assess the association between food consumption and asthma rates in a population based sample of Prince Edward Island children aged 10–12.
Methods: Cross-sectional survey of elementary school children in grades 5 and 6. Children completed an in-class lunchtime food record (LFR) in 2007 (n = 1992), 2010 (n = 1625) and 2012 (n = 1564), recording the food , amount and source overseen by research assistants. Classification into PIF and AIF categories was based on nutrient composition and research evidence. Logistic regression models adjusted for confounders (parental income, education level and child's age) were used to examine the odds of having parent reported asthma associated with daily servings of AIF and PIF. Results: Boys had a greater odds of reported asthma prevalence (OR 1.72, 95% CI 1.49–1.97). Given the large effect of gender, separate models were run for boys and girls. In girls, there was a positive association with sugar intake (PIF) (OR 1.55, 95% CI 1.06–2.27) and French fries (PIF) (OR 1.27, 95% CI 1.01–1.60) and asthma rates, while no effect was seen in boys. No significant associations with AIF were shown for either gender.
Implications & Conclusions: While consumption of PIF foods is associated with a modest increase in reported asthma rates in girls, there was no evidence of a protective effect of AIF in either gender. These findings are of importance to public health stakeholders and policy makers, suggesting that limiting PIF may be one way of reducing childhood asthma.

A province wide approach to nutrition screening for toddlers and preschoolers: Implementing NutriSTEP® in Prince Edward Island

*R Larsen, MEd, RD[*1], J A McDowall, Msc, RD[1], J Vloet-Koughan, RD[1], R Laughlin, RD[1], R Dowling, RD[1], L Faubert, RD[1], B Hardy, RD[1], C Knox, RD[1], Dr. Melissa (Misty) Rossiter, PhD, RD[2]. [1]Public Health & Family Nutrition, Health PEI, Charlottetown, Prince Edward Island; [2]University of Prince Edward Island, Charlottetown, Prince Edward Island [E]*

Purpose: To implement a universal ethical nutrition screening method and referral process for toddlers and preschoolers in Prince Edward Island. In October 2015, NutriSTEP® (Nutrition Screening Tool for Every Preschooler) and Toddler NutriSTEP® were incorporated into the standard screening practice of the 18-month and 4-year Child Health Clinics (CHCs) at Public Health Nursing offices across PEI. Children in PEI are seen by Public Health Nursing (PHN) for screening and immunization. The goal is to screen toddlers and preschoolers at critical developmental stages to identify nutrition risk and provide appropriate referrals.
Process: Registered Dietitians working in Health PEI's Public Health and Family Nutrition (PHFN) program identified CHCs as the best screening setting and adopted the assisted referral method as the model for screening and referring. PHFN Dietitians developed training manuals, standardized resources and a referral map. The assisted referral method was integrated into CHCs and PHNs were trained as screen administrators. Parents completed the appropriate NutriSTEP® questionnaire upon arrival for their appointment. The questionnaire was reviewed by PHN who then provided appropriate education and/or referrals.
Project Summary: During the first 6 months of implementation, 1330 questionnaires were completed (650 toddler, 680 preschooler) at eleven PHN offices. Nutrition risk levels for toddlers were: 2% high, 5% moderate, and 93% low. Preschooler risk levels were: 5% high, 12% moderate, and 83% low. A referral to a PHFN Dietitian is offered for moderate or high risk scores.
Recommendations and Conclusions: Formal evaluation has not yet been conducted and data collection is in process. Preliminary feedback indicates a time constraint for completing the screen before CHC appointments so they will now be sent in the mail. Future work includes partnering with the University of PEI to assist with evaluation. Discussions are in process for implementing the screens in First Nations communities.