

2023 NUTRITION RESEARCH DAY

LAND ACKNOWLEDGEMENT

We acknowledge that Brescia University College is located on the traditional lands of the Anishinaabek (*Ah-nish-in-a-bek*), Haudenosaunee (Ho-den-no-show-nee), Lūnaapéewak (*Len-ahpay-wuk*) and Chonnonton (*Chun-ongk-ton*) Nations, on lands connected with the London Township and Sombra Treaties of 1796 and the Dish with One Spoon Covenant Wampum.

With this, we respect the longstanding relationships that Indigenous Nations have to this land, as they are the original caretakers. We acknowledge historical and ongoing injustices that Indigenous Peoples (First Nations, Métis, and Inuit) endure in Canada, and we accept responsibility as a public institution to contribute toward revealing and correcting miseducation as well as renewing respectful relationships with Indigenous communities through our teaching, research and community service.

MESSAGE FROM THE CHAIR

Dear faculty, staff, and students,

On behalf of the School of Food and Nutritional Sciences, I am excited to announce the 2023 Nutrition Research Day at Brescia University College.

Just two years ago, our graduating class of MScFN students made the decision to pursue a graduate degree in Foods and Nutrition at Brescia. By doing so, they made a commitment to themselves and their future. Today we are here to celebrate their remarkable success. Through discipline and perseverance, they have become a success story in one of the more challenging but rewarding graduate programs in Canada. With the guidance and mentorship of our amazing faculty, staff, and research supervisors, they have enhanced their written and verbal communications skills, learned the importance of teamwork and collaboration, how to never give up when there are setbacks, to ask questions in search for answers, and to derive meaning through analytic ability and foresight.

There are so many reasons why research is important. It improves knowledge, critical thinking skills, curiosity, introduces fresh ideas, builds credibility, employment prospects, teaches discernment of low- and high-quality data, creates awareness, and helps us make good decisions in life. Lastly, research should foster humility because our knowledge is vastly imperfect.

Graduates - enjoy this day and treasure this moment. You make us all proud. You have become the 15th cohort of graduates of our MScFN program.

Sincerely,

Jamie Seabrook, PhD
Chair and Professor
School of Food and Nutritional Sciences
Brescia University College



STUDENT PRESENTATIONS

10:15 AM	CHRISTINE BALSILLIE Nutritional status in pulmonary hypertension patients
10:30 AM	MANTALA MILEMBAMANE Maternal eating disorders and adverse birth outcomes: A systematic review and meta-analysis
10:45 AM	SULAYMAH MOUSSA Development of probiotic oat beverage using <i>Lactocaseibacillus rhamnosus</i> GR-1 fortified with short chain and long chain inulin fibre
11:00 AM	SHANNON ROWAN Learning needs of dietetic students prior to pediatric placements from the perspective of the student and preceptor: A systematic scoping review
11:15 AM	JEVON BISSCHOP Understanding adolescents' beliefs regarding milk and milk product consumption and reasons for under consumption
11:30 AM	AMY CAMPBELL Agriculture-related courses in Canadian universities: How objectives and content differ between science and social science faculties
11:45 AM	JENNA MUBARAK Vitamin D status in patients with pulmonary hypertension
1:00 PM	JORDYN BUTLER Canadian midwives' experiences with nutrition in their training and practice
1:15 PM	ERICA PELLIZZARI Knowledge and intake of one-carbon nutrients in Canadian citizens capable of bearing children following a vegetarian, vegan, or gluten-free diet
1:30 PM	EMMA BIANCANIELLO Dietary polyphenol intake in the Canadian population: Findings from the 2015 Canadian Community Health Survey – Nutrition
1:45 PM	RIVAH GOLDSTEIN Increasing food and nutrition literacy among the Deafblind community through accessible media creation: Important considerations
2:00 PM	MADEHA HANIFI & WENJUN LIU Does dietitian involvement during pregnancy improve birth outcomes? A systematic review
2:15 PM	RUTH BURROWES Development of probiotic yogurt from almond and cow's milk using <i>Lactocaseibacillus rhamnosus</i> GR-1
2:30 PM	JORDYN MILLER & CASSANDRA TRUCHON Evaluation of the effectiveness of an online support service for Canadian mothers in maintaining breastfeeding with infants discharged from NICU



CHRISTINE BALSILLIE

MScFN Student, Practicum Stream

Faculty Supervisor: Dr. Janet Madill

TITLE Nutritional status in pulmonary hypertension patients

AUTHORS Christine Balsillie, MScFN (c)^{1*}; Awatif Al-Mubarak, MScFN (c)¹; Sanjay Mehta, MD^{2,3}; Janet Madill, PhD, RD, FDC¹; Sylvia Rinaldi, PhD, RD¹

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³Pulmonary Hypertension Association (PHA) of Canada.

BACKGROUND Pulmonary hypertension (PH) is a group of diseases defined by increased pulmonary artery pressure, which results in right ventricular failure, symptoms of dyspnea and fatigue, and negatively impacts the patients' quality of life. Malnutrition can have a negative impact on lung function by impairing the body's ability to maintain and synthesize muscle, decreasing immune function, and increasing blood pressure. Currently, there is minimal data on PH and nutritional status.

OBJECTIVES To determine the nutritional status in patients with PH using subjective global assessment (SGA), and compare nutrition status with PH symptom severity, functional status, protein and leucine intake, quadriceps muscle layer thickness, standardized phase angle, fat free mass index, and 25 hydroxy vitamin-D (25(OH)D) levels.

METHODS We report on 100 PH patients with complete data on SGA in this observational cross-sectional study. In-clinic data were collected using; NYHA functional class (NYHA), six-minute walk distance (6MWD), food records, ultrasound measured at the mid-point of the patella and anterior superior iliac spine, handgrip strength, bioelectrical impedance analysis, and chart review. Data were analyzed with the independent t-test with means \pm SE, the Mann Whitney U test, chi-square, and two-way ANOVA; SPSS v28 and a significance level of $p < 0.05$.

RESULTS Malnourished patients walked less (meters) than not malnourished ($p = 0.006$). Of patients classified as not malnourished, 25% had severe symptoms identified by NYHA compared to 60% of those malnourished ($p < 0.001$).

CONCLUSION Malnourished patients had more severe PH symptoms and worse functional capacity than patients classified as not malnourished.



MANTALA MILEMBAMANE

MScFN Student, Practicum Stream

Faculty Supervisors: Dr. Jamie Seabrook and Dr. Jasna Twynstra

TITLE Maternal eating disorders and adverse birth outcomes: A systematic review and meta-analysis

AUTHORS Mantala Milembamane, MScFN (c)¹; Nadin M. Moussa, MScFN (c)¹; Jasna Twynstra, PhD¹⁻⁴; Jamie A. Seabrook, PhD^{1-3,5-6}

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BACKGROUND Eating disorders (ED) can alter food consumption patterns during pregnancy and increase the odds of experiencing adverse birth outcomes. Previous systematic reviews have described this relationship, but there are no existing meta-analyses on this topic.

OBJECTIVES This systematic review and meta-analysis examines the association between lifetime maternal eating disorders including anorexia nervosa (AN), bulimia nervosa (BN), and binge eating disorder (BED) with low birth weight (LBW), preterm birth (PTB), small for gestational age (SGA), large for gestational age (LGA), and miscarriage.

METHODS Two reviewers systematically searched PubMed, CINAHL, Web of Science, and EMBASE for quantitative studies on maternal EDs that predated birth outcomes. Articles were assessed by title and abstract screening and full-text review. Data were extracted from included studies and the Mantel-Haenszel random-effects model was used to test for associations, with the odds ratio (OR) as the effect measure.

RESULTS Eighteen studies were included in the review. The meta-analyses included 6 studies on miscarriage, 11 on PTB, 4 on LBW, 9 on SGA, and 4 on LGA. The results showed significant positive associations between AN and LBW (OR 1.74, 95% CI 1.49, 2.03), AN and SGA (OR 1.39, 95% CI 1.17, 1.65), BN and PTB (OR 1.19, 95% CI 1.04, 1.36), and BED and LGA (OR 1.43 95% CI 1.18, 1.72). EDs were not significantly correlated with miscarriage.

CONCLUSION These findings reveal the importance of training healthcare providers such as dietitians, obstetricians and gynecologists, and mental health professionals to screen for and treat EDs in this population.



SULAYMAH MOUSSA

MScFN Student, Practicum Stream

Faculty Supervisor: Dr. Sharareh Hekmat

TITLE Development of probiotic oat beverage using *Lactocaseibacillus rhamnosus* GR-1 (LGR-1) fortified with short chain and long chain inulin fibre

AUTHORS Sulaymah Moussa, MScFN (c); Sharareh Hekmat, PhD

BACKGROUND Consumer demand of milk alternatives continues to increase with changes in consumer diet trends. Probiotic non-dairy products have gained popularity due to their health-promoting functions. A probiotic oat beverage fortified with inulin may contribute to meeting consumer demands for health products.

OBJECTIVES The objective of this study is to explore the effect of prebiotic supplementation of inulin on the viability of LGR-1 in oat beverage over 9 hours of fermentation and through 30 days of refrigerated storage.

METHODS Four treatments of the oat beverage were prepared using 4% (w/v) probiotic bacteria and either 2% short-chain, 5% short-chain, 2% long-chain, or 5% long-chain inulin. The treatments were compared to a control after 0, 3, 6, and 9 hours of fermentation and after 1, 15, and 30 days of refrigerated storage. The pH value of these treatments were measured at all timepoints.

RESULTS LGR-1 counts in all oat beverage treatments reached viable values of at least 10^7 CFU/ml at the fermentation and storage timepoints. There were no significant differences in bacterial counts through the 9-hour fermentation period, nor through the 30-day storage period. Significant decreases in pH were observed through the fermentation period, however there were no significant changes in pH through the storage timeframe.

CONCLUSION All oat beverage treatments reached viable microbial counts that exceed the minimum requirements for probiotic classification and health benefits. The fortification of inulin fibre showed no adverse effects of the viability of LGR-1. This probiotic oat beverage may be an alternative to probiotic dairy products.



SHANNON ROWAN

MScFN Student, Practicum Stream

Faculty Supervisor: Dr. Colleen O'Connor

TITLE	Learning needs of dietetic students prior to pediatric placements from the perspective of the student and preceptor: A systematic scoping review
AUTHORS	Shannon Rowan, MScFN (c); Jenna Saltsman, MHSc (c); Joy Hoard, MSc, RD; Farrah Gi-Lin Wan, DDEPT, RD; Helen Toews, MSc, RD; Colleen O'Connor, PhD, RD
BACKGROUND	Undergraduate dietetics programs build a comprehensive foundation of knowledge and skills for future nutrition professionals. Although nutrition needs at all stages of life are addressed, a review of course outlines from accredited undergraduate dietetic programs in Ontario, Canada displayed a primary focus on the nutritional considerations of adults with brief or insufficient pediatric topics and learning opportunities. This identified learning gap may place dietetic students at a disadvantage when pursuing a placement or career in pediatrics.
OBJECTIVES	This study aimed to identify learning needs of dietetic students prior to participating in a pediatric placement.
METHODS	A systematic scoping review was conducted according to PRISMA-ScR guidelines. Four databases were searched October 2021 and repeated in May 2022. Studies meeting inclusion criteria focused on learning needs, methods of teaching dietetic students and learning or support needs of dietetic preceptors.
RESULTS	From a total of 2584 titles and abstracts screened, 25 studies were identified. Identified themes include preferred student learning styles, effective learning methods, preceptor identified learning or support needs and preceptor identified traits of successful dietetic students. Most identified studies focused on interventions involving adult patients, however the methods of learning may be highly applicable and useful for pediatric populations.
CONCLUSION	This review identified learning strategies to enhance the dietetic curriculum and displayed the need for enhanced support/resources for preceptors to improve placement experiences for students. The lack of research on pre-pediatric placement learning needs of dietetic students must be addressed to ensure effective preparation of competent pediatric-focused registered dietitians.



JEVON BISSCHOP

MScFN Student, Practicum Stream

Faculty Supervisor: Dr. Danielle Battram

TITLE Understanding adolescents' beliefs regarding milk and milk product consumption and reasons for under consumption

AUTHORS Jevon Bisschop, MScFN (c); Lindsay Dawson, MScFN, RD; Danielle S. Battram, PhD, RD, PHEc

BACKGROUND Milk and milk products (MMPs) are an abundant source of nutrients such as protein, calcium, vitamin A, vitamin D, and more. Evidence suggests that increased milk consumption in adolescence is associated with higher diet quality score, improved bone health, and many other potential benefits. Despite this, consumption of MMPs continues to decline in this age group, suggesting that more research is needed to better understand the factors contributing to this decline.

OBJECTIVES This study aimed to investigate adolescents' understanding of MMPs and reasons for their consumption or lack thereof.

METHODS Seventeen focus groups were conducted with Grade 9 to 11 secondary school students. A total of 132 adolescents were included in the focus groups, 69% of whom were female and 98% of whom were in Grades 9 to 10. Four researchers independently conducted inductive content analysis on the data using the principles of the immersion-crystallization method.

RESULTS Overall, participants had a high level of understanding regarding the benefits of MMP consumption, although some myths about MMPs were noted. Participants revealed many factors that influenced MMP consumption both positively and negatively, including social influences, participant beliefs, availability and accessibility, cost, taste preference, and dietary considerations.

CONCLUSIONS This study identified new insights into the factors contributing to adolescents' consumption of MMPs. While further education is clearly needed to correct the misconceptions adolescents have regarding MMPs, additional supports (e.g., cost reduction and better access) are also needed to improve consumption.



AMY CAMPBELL

MScFN Student, Practicum Stream

Faculty Supervisor: Dr. June Matthews

TITLE Agriculture-related courses in Canadian universities: How objectives and content differ between science and social science faculties

AUTHORS Amy Campbell, MScFN (c)¹; Megan Versteegh, MScFN, RD¹; Hannah McGraw, DDEPT, RD¹; Sharanjit Gill, DDEPT, RD¹; Jane Morgan, DDEPT, RD¹; Sierra Steele, DDEPT, RD¹; Lisa Mardlin-Vandewalle, MHS, RD; June Matthews, PhD, RD, PHEC¹

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BACKGROUND Many Canadians lack knowledge of modern agriculture. Young Canadians' understanding of food production is often derived from social media content that lacks credibility. Another source of agriculture-related information is the university classroom; however, the content being taught is unknown.

OBJECTIVES The primary objective of this study was to investigate the number of agriculture-related courses at Canadian universities and the faculties in which they are offered. The secondary objective was to qualitatively compare content in Social Science, Humanities, and Arts (SSHA) courses with those offered in Science, Technology, Engineering, and Math (STEM).

METHODS English language university websites (n=73) were searched using the terms *agri**, *food**, *farm**, *crop**, *plant**, *animal**, and *sustain**. Course materials, objectives, and content were analyzed using descriptive statistics and content analysis.

RESULTS A total of 941 brief course descriptions were retrieved: 394 in 23 SSHA faculties and 547 in 12 STEM faculties. Based on these course descriptions, 419 course outlines were found: 119 in SSHA; 300 in STEM. Six themes were identified: industrial agriculture and biotechnology; sustainability and the environment; alternatives and organic agriculture; food sovereignty, Indigenous and gender; food security and food safety; and animal ethics and welfare. SSHA courses often recommended alternatives to modern agricultural production, while STEM courses offered information on practical aspects of food production.

CONCLUSION Agriculture is being taught in diverse SSHA and STEM faculties. Instructors are encouraged to provide balanced and objective information about agriculture and encourage constructive discussions such that students can make individual- and policy-level decisions based on facts.



JENNA MUBARAK

MScFN Student, Practicum Stream

Faculty Supervisor: Dr. Janet Madill

TITLE Vitamin D status in patients with pulmonary hypertension

AUTHORS Awatif Al-Mubarak, MScFN (c)¹; Christine Balsillie, MScFN (c)¹; Sanjay Mehta, MD^{2,3}; Janet Madill, PhD, RD, FDC¹; Sylvia Rinaldi, PhD, RD¹

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³Pulmonary Hypertension Association (PHA) of Canada

BACKGROUND Pulmonary hypertension (PH) is defined as an abnormal elevation in pulmonary arterial pressure. PH Patients suffer from dyspnea, fatigue, and difficulty exercising, which negatively affect their quality of life. Beyond bone health, vitamin D plays a role in lung tissue remodeling and regulation of arterial blood pressure. However, there is very little information about the impact of poor vitamin D status on PH patients.

OBJECTIVES The study aimed to assess vitamin D status; determine Vitamin D intake and supplementation; and assess the association between Vitamin D deficiency, New York Heart Association (NYHA) functional classification, and a 6-minute walking distance (6MWD).

METHODS 82 patients participated in this observational cross-sectional study. 25(OH)D serum levels [nmol/L] were obtained and defined as: sufficient >72.5, insufficient ≥50–72.5, and deficient < 50. NYHA functional class and 6MWD were analyzed to determine symptom severity and functional status, respectively. Statistical analysis was performed using SPSS; p < 0.05 was noted as significant.

RESULTS Approximately 55% of patients were in the insufficient and deficient categories, and 96% didn't meet the vitamin D Recommended Dietary Allowance (RDA). Only 39% were taking a vitamin D supplement. No associations between serum 25(OH)D levels and NYHA or 6MWD were found.

CONCLUSION More than half of PH patients had insufficient or deficient 25(OH)D serum levels. The majority of patients were not meeting vitamin D RDA. No associations between vitamin D deficiency and NYHA or 6MWD. Future research is needed to continue exploring the impacts of vitamin D deficiency in PH patients.



JORDYN BUTLER

MScFN Student, Practicum Stream

Faculty Supervisors: Dr. Jasna Twynstra and Dr. Jamie Seabrook

TITLE Canadian midwives' experiences with nutrition in their training and practice

AUTHORS Jordyn Butler, MScFN (c)¹; Yvana Sawaya, MScFN^{1,2}; Jamie A. Seabrook, PhD¹⁻⁶; Janet Madill, PhD, RD, FDC¹; Jasna Twynstra, PhD^{1,5-7}

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BACKGROUND Midwives are primary prenatal care providers and are well positioned to offer nutrition advice to pregnant individuals. However, there are limited Canadian studies that have explored midwives' provision of nutrition advice.

OBJECTIVES To explore Canadian midwives' experiences with nutrition in their practice, their level of nutrition training, and their recommendations on select nutrition topics.

METHODS This cross-sectional study used an anonymous, online survey. Eligible participants were registered Canadian midwives. Recruitment strategies included an e-newsletter via national and provincial midwifery associations, social media posts, and emails to midwifery clinics.

RESULTS In total, 161 midwives completed the online survey. Most midwives (92.5%) indicated nutrition for pregnancy was important and 83.2% believed their role in providing nutrition information to pregnant individuals was important. About two-thirds (63.7%) of midwives received nutrition training. Comfort levels were highest (median=4) when providing nutrition advice on healthy eating, weight gain, *Listeria*, anemia, heart burn, safe food handling, nutrition for breastfeeding, and weight gain for women with obesity. Almost all of the midwives (99.4%) had provided nutrition information to pregnant individuals, and 85.2% of their recommendations aligned with Canadian guidelines and literature.

CONCLUSION Canadian midwives value the importance of nutrition during pregnancy and their role in providing nutrition information to pregnant individuals. Midwives feel comfortable in providing nutrition information on many nutrition-related topics, and provide advice that aligns with Canadian guidelines and relevant literature.



ERICA PELLIZZARI

MScFN Student, Practicum Stream

Faculty Supervisor: Dr. Brenda Hartman

TITLE Knowledge and intake of one-carbon nutrients in Canadian citizens capable of bearing children following a vegetarian, vegan, or gluten-free diet

AUTHORS Erica Pellizzari, MScFN (c); Brenda Hartman, PhD, RD

INTRODUCTION The intakes of 1C nutrients (folate, vitamins B₆ and B₁₂ and choline) in Canadian citizens capable of bearing children (CCCBC) who follow a vegetarian, vegan or gluten-free (GF) diet are of key interest given that these nutrients are found primarily in animal and fortified food products.

OBJECTIVES

- 1) To explore the diet knowledge of 1C nutrients in CCCBC and determine how the intakes of 1C nutrients are influenced by these exclusionary dietary patterns.
- 2) To identify what foods/supplements containing folate, vitamins B₆ and B₁₂ and choline are consumed.

METHODS A questionnaire was developed to assess the knowledge and intakes of 1C nutrients in CCCBC following a vegetarian, vegan or GF diet. Participants were recruited for the study using the social media platform Facebook. Variables of interest are examined and reported using frequencies of responses. Written survey responses were organized into themes of similar responses.

RESULTS Among the 483 respondents recruited for the survey, 271 provided complete data and were used in analysis. Of the 1C nutrients, participants were most knowledgeable about vitamin B₁₂ with 190 (70.1%) having heard of it previously. Less than half of the participants indicated that they have heard of choline. The majority of participants indicated that they were unaware of how much of each 1C nutrient was needed in the diet for good health.

CONCLUSION Better understanding the food knowledge and intakes of 1C nutrients in CCCBC who practice an exclusionary diet pattern will aide in addressing any potential public health concerns related to 1C nutrients.



EMMA BIANCANIELLO

MScFN Student, Practicum Stream

Faculty Supervisor: Dr. Danielle Battram

TITLE Dietary polyphenol intake in the Canadian population: Findings from the 2015 Canadian Community Health Survey – Nutrition

AUTHORS Emma C. Biancaniello, MScFN (c)¹; Sarah Tiessen, MScFN, RD¹; Brenda Hartman, PhD, RD¹; Danielle S. Battram, PhD, RD, PHEc^{1,2}

¹School of Food and Nutritional Sciences, Brescia University College, London, Ontario, Canada

²Schulich Interfaculty Program in Public Health, Western University, London, Ontario, Canada

OBJECTIVES This study aimed to estimate usual polyphenol intake among Canadians using the nationally representative 2015 Canadian Community Health Survey – Nutrition and to explore the main dietary contributors and sociodemographic and lifestyle factors that may impact polyphenol intake.

METHODS Dietary information was collected from 19,409 respondents using 24-hour dietary recalls. The polyphenol content of foods and beverages was estimated using the Phenol-Explorer Database (version 3.6). A daily intake value for total polyphenols (adjusted to energy intake), and main and subclass contributions were calculated for each respondent and recall day. Usual intake was estimated by age and sex and by sociodemographic and lifestyle factors independently for adults and children using the National Cancer Institute method. SAS SURVEYMEANS and FREQ procedures were used to perform further analyses.

RESULTS Usual total polyphenol intake was 1119.3 mg/1000 kcal/day (95% CI: 1090.5, 1148.1) for adults ≥ 19 years and 473.0 mg/1000 kcal/day (95% CI: 454.9, 491.0) for children 2-18 years. Generally, total polyphenol intakes differed by age, sex, ethnicity, and household education status and were higher among coffee and tea consumers. Most polyphenols came from flavonoids (40.0%) and phenolic acids (49.8%), with children consuming more flavonoids and other polyphenols and adults more phenolic acids. The top food contributors to polyphenol intake were coffee (26.8%), tea (8.9%), fruit juice (4.2%), banana (4.1%), and apple (3.8%).

CONCLUSION Usual intake of total polyphenols among Canadians differed primarily by age. Beverages were top contributors to total intake. Further research to explore associations between polyphenol intake and disease rates is warranted.

KEYWORDS Polyphenols, 2015 Canadian Community Health Survey – Nutrition, Flavonoids, Phenolic Acids, Adults, Children



RIVAH GOLDSTEIN

MScFN Student, Practicum Stream

Faculty Supervisor: Dr. Colleen O'Connor

TITLE Increasing food and nutrition literacy among the Deafblind community through accessible media creation: Important considerations

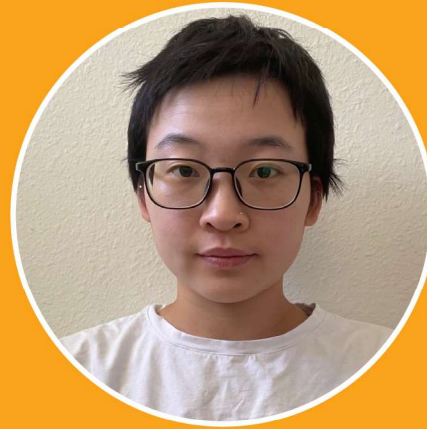
AUTHORS Rivah Goldstein, MScFN (c); Colleen O'Connor, PhD, RD

BACKGROUND Deafblind individuals face unique communication barriers that impact their food and nutrition literacy (FNLIT). Limited FNLIT among the Deafblind population contributes to food insecurity and nutrition related health issues. The purpose of this project was to develop an accessible nutrition resource in video format on reading food labels and an instructional guide for creating accessible nutrition media for the Deafblind population.

METHODS A literature search on food literacy and education programs in the Deafblind population was conducted, and expert opinions were obtained to create an accessible nutrition resource. Literacy experts and technology staff from the Canadian National Institute of the Blind (CNIB) Deafblind Community Services were consulted throughout the video creation process, and feedback was obtained from CNIB Deafblind Community Services users.

RESULTS The video on understanding food labels featured narration, visuals with audio and written descriptions, title cards, minimal transitions, captions, and American Sign Language (ASL) interpretation. An instructional guide was developed to help others create accessible nutrition resources, and it covered key considerations for video preparation, script writing, narration, video creation, captions, editing, and ASL interpretation.

CONCLUSION Accessible nutrition resources are essential to improve FNLIT among the Deafblind population and to reduce food insecurity and related health issues. The project's video and instructional guide are valuable resources for those interested in creating accessible nutrition resources. Key considerations for creating accessible nutrition resources include video preparation, script writing, narration, video creation, captions, editing, and ASL interpretation. By providing accessible nutrition resources, we can increase FNLIT in the Deafblind community, leading to better health outcomes.



MADEHA HANIFI & WENJUN LIU

MScFN Students, Practicum Stream

Faculty Supervisors: Dr. Jamie Seabrook and Dr. Jasna Twynstra

TITLE Does dietitian involvement during pregnancy improve birth outcomes? A systematic review

AUTHORS Madeha Hanifi, MScFN (c); Wenjun Liu, MScFN (c); Jamie A. Seabrook, PhD; Jasna Twynstra, PhD

INTRODUCTION Maternal diet during pregnancy can have a significant impact on maternal and offspring health. As nutrition counseling is a key component of prenatal care, registered dietitians (RDs) are trained professionals who can provide personalized nutrition counseling customized to an individual's sociocultural needs.

OBJECTIVES To determine if RD involvement during pregnancy is associated with a lower prevalence of low birth weight, preterm birth, macrosomia, small for gestational age, large for gestational age, and infant mortality in the United States and Canada.

METHODS The systematic review was conducted through a search of four databases: PubMed, CINAHL, Embase, and Web of Science.

RESULTS A total of 14 studies were identified. Women had a lower prevalence of low birth weight and preterm birth infants when RDs were involved during prenatal care. RD involvement during pregnancy was not associated with macrosomia. The relationship between RD involvement and small for gestational age, large for gestational age, and infant mortality was inconclusive.

CONCLUSION RD involvement during pregnancy can improve birth outcomes, however, more research studying the relationship between RD involvement and small for gestational age, large for gestational age, and infant mortality is needed. Future research should also investigate the specific dietary advice provided by RDs and the extent and timing of their involvement throughout pregnancy to better understand the mechanisms surrounding nutrition counseling, in utero development, and health outcomes.



RUTH BURROWES

MScFN Student, Practicum Stream

Faculty Supervisor: Dr. Sharareh Hekmat

TITLE Development of probiotic yogurt from almond and cow's milk using *Lactocaseibacillus rhamnosus* GR-1

AUTHORS Ruth Burrowes, MScFN (c); Sharareh Hekmat, PhD

BACKGROUND There is an increasing interest in probiotic-containing foods along with a consumer shift towards plant-based products for health, environmental, and ethical reasons. A yogurt containing *L. rhamnosus* GR-1 and almond milk may provide enhanced nutritional value and meet consumer demand.

OBJECTIVES This study evaluated the effect of almond milk addition on the growth and viability of *Lactocaseibacillus rhamnosus* GR-1 in yogurt samples over 6 hours of fermentation and 30 days of refrigerated storage.

METHODS Four yogurt treatments (T1-T4) were inoculated with *L. rhamnosus* GR-1 and fermented for 6 hours at 37°C and then refrigerated at 4°C for 30 days. Microbial and pH analysis of each sample was conducted every 2 hours throughout the fermentation period and on days 1, 15, and 30 of cold storage to determine the viability of *L. rhamnosus* GR-1.

RESULTS All samples achieved mean microbial counts of at least 10⁸ CFU/mL during fermentation and storage. During fermentation, mean microbial counts increased for all treatments, however, differences in mean microbial counts between treatments were not significant. During storage, the mean microbial count for T4 at 15 and 30 days was significantly higher ($p=0.031$) than microbial counts on day 1. However, mean microbial counts did not differ significantly across all storage time points for treatments 1, 2, and 3 ($p > 0.05$).

CONCLUSION These results suggest that the addition of almond milk, in combination with cow's milk, is suitable for propagating and preserving the viability of *L. rhamnosus* GR-1 in yogurt.



JORDYN MILLER & CASSANDRA TRUCHON

MScFN Students, Practicum Stream

Faculty Supervisors: Dr. Brenda
Hartman and Dr. Janet Madill

TITLE	Evaluation of the effectiveness of an online support service for Canadian mothers in maintaining breastfeeding with infants discharged from NICU
AUTHORS	Jordyn Miller, MScFN (c); Cassandra Truchon, MScFN (c); Brenda Hartman, PhD, RD; Janet Madill, PhD, RD, FDC
BACKGROUND	The World Health Organization and Health Canada recommend exclusive breastfeeding for six months due to the benefits of breastfeeding. However, not all mothers initiate breastfeeding, and even fewer breastfeed exclusively up to six months. To assist mothers with successful breastfeeding, the Maternal Virtual Infant Nutrition Support clinic was created, offering online breastfeeding support from healthcare professionals and peers.
OBJECTIVES	We measured both breastfeeding initiation and exclusivity rates among mothers of infants admitted to the neonatal intensive care unit in London, Ontario who had access to the Maternal Virtual Infant Support clinic, and described participants' experience with this platform.
METHODS	This prospective cohort study followed 114 mothers of infants admitted to the hospital through surveys at discharge from the neonatal intensive care unit, 1-month post-discharge, and 6-months post-discharge. Breastfeeding rates were determined with frequencies, and inductive thematic analysis was used to describe mothers' feedback on the program.
RESULTS	At discharge, 95.6% of mothers initiated breastfeeding. Exclusive breastfeeding rates at discharge, 1-month post-discharge, and 6-months post-discharge were 72.8%, 65.8%, and 38.3%, respectively. Subthemes from mothers' positive feedback about the platform included that it was a valuable resource, the discussion boards and other program features were useful, participants felt a sense of community, and participants appreciated the quick responses. Subthemes from negative feedback included feeling too overwhelmed to access the platform, technology problems, and complaints.
CONCLUSION	The Maternal Virtual Infant Nutrition Support clinic is an effective tool for supporting breastfeeding among mothers of infants admitted to neonatal intensive care units through providing evidence-based information and peer support.

For more information about our faculty research supervisors, and current and past research projects, please visit the following webpages:

MScFN, Practicum Stream

https://brescia.uwo.ca/graduate/mscfn_internship/faculty_research.php

MScFN, Thesis Stream

https://brescia.uwo.ca/graduate/mscfn_thesis/faculty_research.php

