

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/309473499>

# 2016 INCAM Research Symposium: Expanding Person-Centred Care through Integrative Health Research

Article in *Journal of Complementary and Integrative Medicine* · January 2016

DOI: 10.1515/jcim-2016-0102

CITATIONS

3

READS

87

6 authors, including:



**Heather Boon**

University of Toronto

262 PUBLICATIONS 10,339 CITATIONS

[SEE PROFILE](#)



**Isabelle Gaboury**

Université de Sherbrooke

270 PUBLICATIONS 7,799 CITATIONS

[SEE PROFILE](#)



**Lynda G Balneaves**

University of Manitoba

151 PUBLICATIONS 4,846 CITATIONS

[SEE PROFILE](#)



**Teresa Tsui**

SickKids

13 PUBLICATIONS 201 CITATIONS

[SEE PROFILE](#)

## Abstracts

Heather Boon\*, Isabelle Gaboury, Lynda G. Balneaves, Teresa Tsui, Jeremy Y. Ng and Natalie Bozinovski

# 2016 INCAM Research Symposium: Expanding Person-Centred Care through Integrative Health Research

Toronto Marriott Bloor Yorkville Hotel, Ontario (Canada), 18–19 November 2016

DOI 10.1515/jcim-2016-0102

**Abstract:** The following are abstracts of research presentations given at the 9<sup>th</sup> INCAM Research Symposium. The theme for this year's conference was "Expanding Person-Centred Care through Integrative Health Research", which was held on November 18 and 19, 2016 at the Toronto Marriott Bloor Yorkville Hotel in Ontario, Canada. The abstracts are grouped under the categories of oral or poster presentation based on their presentation at the Symposium. For more information, please visit: <http://www.iscmr.org/content/canadian-chapter---public>.

**Keywords:** complementary and alternative medicine, integrative health care and medicine, person-centred care

---

**Note:** These abstracts have been reproduced directly from the material supplied by the authors, without editorial alteration by the staff of this Journal. Insufficiencies of preparation, grammar, spelling, style, syntax, and usage are the authors.

---

**\*Corresponding author: Heather Boon**, Leslie Dan Faculty of Pharmacy, University of Toronto, Toronto, Ontario,  
E-mail: [heather.boon@utoronto.ca](mailto:heather.boon@utoronto.ca)

**Isabelle Gaboury**, Faculty of Medicine and Health Sciences, University of Sherbrooke, Sherbrooke, Quebec,  
E-mail: [isabelle.gaboury@usherbrooke.ca](mailto:isabelle.gaboury@usherbrooke.ca)

**Lynda G. Balneaves**, College of Nursing, Rady Faculty of Health Sciences, University of Manitoba, Winnipeg, Manitoba,  
E-mail: [lynda.balneaves@umanitoba.ca](mailto:lynda.balneaves@umanitoba.ca)

**Teresa Tsui, Jeremy Y. Ng, Natalie Bozinovski**: Leslie Dan Faculty of Pharmacy, University of Toronto, Toronto, Ontario,  
E-mail: [teresa.tsui@utoronto.ca](mailto:teresa.tsui@utoronto.ca), [jeremyy.ng@mail.utoronto.ca](mailto:jeremyy.ng@mail.utoronto.ca), [natalie.bozinovski@utoronto.ca](mailto:natalie.bozinovski@utoronto.ca)

## Table of Contents

Oral Presentation Abstracts	eA3
Poster Presentation Abstracts	eA12

## Oral Presentation Abstracts

### Fish-derived omega-3 fatty acids and prostate cancer: A systematic review

M. Aucoin (1), K. Cooley (1), C. Knee (1), H. Fritz (1), L. Balneaves (2), R. Breau (3), D. Fergusson (4), B. Skidmore (1), R. Wong (5), D. Seely (1,6)

- (1) Canadian College of Naturopathic Medicine, Toronto, Ontario, Canada
- (2) University of Toronto, Toronto, Ontario, Canada
- (3) Ottawa Hospital, Ottawa, Ontario, Canada
- (4) Ottawa Hospital Research Institute, Ottawa, Ontario, Canada
- (5) McMaster University, Hamilton, Ontario, Canada
- (6) Ottawa Integrative Cancer Centre, Ottawa, Ontario, Canada

**Background:** The use of natural health products in prostate cancer (PrCa) is high despite a lack of evidence with respect to safety and efficacy. Fish-derived omega-3 fatty acids possess anti-inflammatory effects and pre-clinical data suggests a protective effect on PrCa incidence and progression; however, human studies have yielded conflicting results.

**Objectives:** A systematic review was completed of the evidence related to safety and efficacy of fish-derived omega-3 fatty acids in the incidence and progression of PrCa.

**Methods:** A search of OVID MEDLINE, Pre-MEDLINE, EMBASE, and AMED was completed for human interventional or observational data.

**Results:** Of 1776 citations screened, 54 publications were included for review and analysis reporting on three randomized controlled trials, one non-randomized clinical trial, 14 cohort studies, 23 case-control studies and three case-cohort studies. The interventional studies using fish oil supplements in patients with PrCa showed no impact on PSA levels; however, two showed a decrease in inflammatory or other cancer markers. Interactions with other interventions were not assessed. Observational studies assessing the relationship between dietary fish intake and the risk of PrCa were equivocal. Cohort studies assessing the risk of PrCa mortality suggested an association between higher intake of fish and decreased risk of prostate cancer related death.

**Conclusion:** Current evidence is insufficient to suggest a relationship between fish-derived omega-3 fatty acid and risk of PrCa. An association between higher omega-3 intake and decreased PrCa mortality may be present but more research is needed. More intervention trials or observational studies with precisely measured exposure are required.

### Is cranial mobility affecting school performance and can osteopathic manual treatment (OMT) improve it? Results from a pilot study with children in a regular elementary curriculum

A. Bouchard (1)

- (1) Centre de Recherche en Osteopathie du Quebec (CROQ), Sainte-Julie, Quebec, Canada

**Background:** Learning abilities are central competencies for child development and are major predictors of adjustment in adulthood. Learning difficulties affect 10 to 16% of the children population. It is commonly suggested in osteopathy that there is a link between birth trauma, cranial mobility and learning problems.

**Objectives:** This study aims to 1) explore the relation between cranial mobility and academic performances in general children population and 2) document effects of osteopathic manual treatments (OMT) on academic-related parameters.

**Methods:** Two classes of fourth-graders in a French elementary school were included in this pilot study. Students were assigned to experimental (n=29) or control (n=20) groups. Osteopathic cranial assessment and 15 academic parameters were collected pre- and post-intervention. Groups were compared using t-tests and ANOVA.

**Results:** At baseline, subgroups with poorer cranial mobility showed lower academic performances in reading (difference 10,2%,  $p = 0.049$ ) and in 9 related parameters ( $p < 0.05$ ). The OMT group improved on one I.Q. non-verbal

sub-test ( $p = 0.002$ ) and attention span ( $p = 0.048$ ). Empirically, general pattern where OMT appears to reduce the gap between “cranially” blocked and unblocked subgroups in various parameters of academic performances. (e.g. attention span: relative decrease value: 123%, sd (1,16 and 1,11);  $p = 0.019$ ).

**Conclusion:** For the first time, an existing relation between cranial mobility and academic performance is empirically documented. This pilot study suggests that various aspects of school performances are improved through OMT.

## Turmeric formulations in adjunctive cancer treatment: A systematic review

J.S. Clifford (1), R. Salwan (1), V. Theriault (1), D.H. Nelson (1), T.E. McEachern (1), M.K. Abog (1), N. Aggarwal (1), S.J. Ip (1), K. Cooley (1)

(1) Canadian College of Naturopathic Medicine, Toronto, Ontario, Canada

**Background:** Turmeric (*Curcuma longa*) has a long traditional use in the prevention and treatment of cancer. Currently, curcumin and other curcuminoids from turmeric are under intense investigating for their anti-cancer and chemopreventive properties.

**Objectives:** Herein we review the safety and efficacy of mixed curcuminoids (MCs) for the adjunctive treatment of cancer, including an analysis of new bioavailability-enhanced curcumin formulations (BECFs).

**Methods:** A systematic search of MEDLINE, EMBASE, AMED, and The Cochrane Library was conducted to identify clinical trials of curcumin formulations for the treatment of cancer. Outcomes of interest included: efficacy, quality of life, safety, and bioavailability.

**Results:** Of 6659 records identified, 20 studies were included for further analysis: 6 randomized controlled trials (RCTs), 11 phase I/II studies, and 3 case reports. 2/2(100%) RCTs found significant improvement in tumor markers, while 7/7(100%) phase I/II trials showed stable disease or partial responses from 10 to 100% (median 28%). 2/3(66.7%) case reports demonstrated full remission. 4/4(100%) RCTs found significant improvement in quality of life in patients receiving chemotherapy and/or radiation. The overall AE rate was <7.5%, with dose limiting toxicities <3.5%. The most common AEs were abdominal fullness and pain, diarrhea, and nausea. The highest blood curcumin levels were achieved with BECFs.

**Conclusion:** Evidence on the use of curcuminoids in cancer is limited, but promising. More RCTs are needed to quantify efficacy, optimal dosing strategy, and examine possible drug interactions. BECFs are attractive options; more studies are required to confirm their safety and efficacy compared to MCs.

## The monkey on your shoulder: A qualitative study of lymphedema patients' attitudes and experiences of acupuncture and moxibustion (acu/moxa)

B. de Valois (1), A. Asprey (2), T. Young (1)

(1) Supportive Oncology Research Team (SORT), Lynda Jackson Macmillan Centre, Mount Vernon Cancer Centre, Northwood, Middlesex, United Kingdom

(2) Primary Care Research Group, Peninsula College of Medicine and Dentist, universities of Exeter and Plymouth, Exeter, Devon, United Kingdom

**Background:** Lymphoedema is a distressing consequence of cancer treatment that has significant negative impact on health-related quality of life. Multi-disciplinary approaches are needed to improve physical and psychosocial well-being. Acupuncture and moxibustion, two modalities of traditional East Asian medicine, may contribute to improved outcomes for cancer survivors with lymphoedema.

**Objectives:** This study aimed to explore how breast cancer and head and neck cancer survivors with treatment-related lymphoedema perceive and experience acu/moxa treatment.

**Methods:** This was a qualitative focus group study, nested in a 3-step mixed methods observational study, carried out in a cancer drop-in and information centre in north-west London. Six focus groups and one telephone interview were conducted with participants who had completed up to 13 acu/moxa treatments. Scripts were transcribed, coded, and analysed to identify salient and overarching themes.

**Results:** Twenty-three cancer survivors participated. Participants reported feeling disempowered by cancer treatment and the subsequent diagnosis of lymphoedema. They valued acu/moxa for its whole-person approach, and for time spent with a practitioner who cared for, listened to, and responded to their needs. Participants described changes in physical and psychosocial health, such as increased energy levels, reduced pain and discomfort, and alleviation of lymphoedema related symptoms. They also reported feelings of empowerment, personal control, and acceptance. Many were motivated to improve self-care.

**Conclusion:** Many participants who received acu/moxa treatment reported improved wellbeing and a more proactive attitude towards self-care. Acu/moxa can be considered a beneficial adjunct to usual care for a chronic, incurable condition.

## Exploring massage and manual therapy patient safety incident (adverse event) taxonomies: A scoping review

*D. Gowan-Moody (1), A. Baskwill (2), A. Leis (3)*

- (1) Department of Community Health & Epidemiology, College of Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, Canada
- (2) Health Research Methodology, Health Sciences, McMaster University, Hamilton, Ontario, Canada
- (3) Department of Community Health & Epidemiology, College of Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, Canada

**Background:** Despite increased use of massage therapy and evidence supporting its effectiveness, a dearth of information on massage safety persists. Given the known lack of standardization of terminology and classification of patient safety incidents (PSIs) within manual therapy fields, a scoping review was undertaken to map the available literature.

**Objectives:** To explore definitions and taxonomies of patient outcomes regarding type, degree and impact of harm in existing massage and manual therapies literature on PSIs.

**Methods:** Ten peer-reviewed electronic databases limited to English as well as bibliographies, citations and key authors were searched. Inclusion/exclusion criteria were applied to all records independently by two reviewers and qualitative information was extracted and charted.

**Results:** The titles of 966 articles were identified and their abstracts reviewed; 66 articles were retrieved and read. Sixteen of them met the final inclusion criteria and were retained for analysis. Data extraction included cataloguing the definition and taxonomies used to describe harm. Several categories such as operationalization of intervention and outcome concepts, methods for measuring harmful outcomes, expert opinion, and gaps were identified through analysis.

**Conclusion:** Using a literature scoping review methodology we were able to map definitions and classifications of patient safety incidents across fields that use ‘hands-on’ intervention. The results of the study also highlight the complexity in defining and classifying adverse patient outcomes and provide important information on the means of determining and recording type, degree, and impact of harm. The results may be useful for guiding patient safety research in massage therapy and other fields.

## Efficacy of an osteopathic treatment for biomechanical suckling dysfunctions in newborn: A randomised controlled trial

*J. Herzhaft-LeRoy (1), I. Gaboury (1), M. Xhignesse (1)*

- (1) Département de médecine de famille et médecine d’urgence, Faculté de médecine et des sciences de la santé, Université de Sherbrooke, Quebec, Canada

**Background:** Despite well-known recommendations from national and international bodies including the World Health Organization (WHO), few mothers achieve the goal of breastfeeding exclusively for six months. According to

previous studies, half of mothers stop breastfeeding due to biomechanical issues in the first month, despite increasing support from lactation consultants. Osteopaths worldwide work with these babies, but there is little empirical evidence for this type of treatment.

**Objectives:** To determine the efficacy of an osteopathic treatment coupled with usual lactation consultations on infants' ability to latch. Secondary objectives included assessment of nipple pain and mothers' perceptions of the impact of treatment.

**Methods:** We conducted a single blind, randomised controlled trial at a mother-to-mother support group between January and December 2015. Data was collected at four different times over a 10 day period (T0-T10) from 97 mother-infant dyads using the LATCH assessment tool, a Visual Analog Scale (VAS) for mother nipple pain, and a *de novo* questionnaire for breastfeeding management and potential treatment side effects.

**Results:** There were consistent statistical and clinical differences in the mean LATCH scores between the treatment (T0 = 7.65; T1 = 8.36 and T3 = 9.22) and the control groups (T0 = 7.63; T1 = 8.13 and T3 = 8.18),  $p < 0.001$ . Mothers reported no serious or unexpected side effects over the follow-up period.

**Conclusion:** This study is one of the first to bring together lactation consultants and osteopaths to deal with infants with biomechanical suckling dysfunctions. Findings support the hypothesis that the addition of osteopathy to regular lactation consultations is beneficial and safe.

## Lost in translation? Linguistic regulatory policies for traditional acupuncturists in North America

N. Ijaz (1), H. Boon (1)

(1) Leslie Dan Faculty of Pharmacy, University of Toronto, Toronto, Ontario, Canada

**Background:** The regulation of traditional medicine (TM) practitioners, both within and outside particular TM systems' nations of origin, presents a set of unique policy challenges owing to historical, cultural and epistemic factors alike.

**Objectives:** This study examines one such policy challenge, which has proven contentious in the North American context: the question of linguistic regulatory requirements for practitioners of traditional East Asian acupuncture.

**Methods:** Undertaking thematic analysis of 31 qualitative interviews with key informants to a recent acupuncture regulatory process in Ontario, Canada, we explore the following three questions in the North American context: a) what level of English proficiency should be expected of East Asian immigrant practitioners of traditional acupuncture? b) should regulatory entry examinations be offered in both English and East Asian languages? c) is it reasonable to expect that patient records be kept in English?

**Results:** Four key study themes emerge in this work, representing a range of perspectives on the preceding questions: patient safety; mainstream integration; honouring traditional knowledge (keepers); and the provision of culturally-inclusive health care. Using an equity-based public interest framework for TM professional regulation, alongside a language-related United Nations policy instrument, we interpret our four key study themes to help guide regulators in navigating similar regulatory challenges.

**Conclusion:** While we find that safety and mainstream integration represent important public interest considerations in this case, we propose specific linguistic regulatory mechanisms through which regulators may also prioritize traditional knowledge preservation and the delivery of culturally-appropriate health care in regulating TM practitioners.

## Post-9/11 veterans and their partners improve mental health outcomes with a self-directed mobile app and web-based wellness training program: A randomized controlled trial

J. Kahn (1)

(1) Psychiatry Department, University of Vermont College of Medicine, Burlington, Vermont, USA



**Background:** Veterans deployed in the Global War on Terror (GWOT) evidence a complex mix of adverse psychological, physical, spiritual and family impacts. Such complex suffering seems to require a multifaceted approach to support overall wellbeing. For personal and logistical reasons many Veterans needing care do not receive it.

**Objectives:** We evaluated effects on mental health and wellness outcomes of a web- and mobile app-based, self-directed program of instruction (Mission Reconnect) in mind-body wellness skills, for Veterans and partners post-deployment.

**Methods:** 160 Veteran/partner dyads in four regions of the US were randomized to Mission Reconnect (MR), waitlist control, an evidence-based weekend retreat comparator program, or MR plus the comparator. A battery of standardized and investigator-generated instruments assessing mental health outcomes was administered at baseline, 8 weeks and 16 weeks.

**Results:** During the 8-week reporting period subjects in MR arms used some aspect of MR 20 times/week, totaling 2.5 hours/week, and had significant improvements in measures of PTSD, depression, sleep quality, perceived stress, resilience, self-compassion and pain.. Significant reductions in self-reported pain, tension, irritability and anxiety were associated with partner massage use.

**Conclusion:** Veterans and partners made sustained use of a range of wellness practices taught in the Mission Reconnect program. Home-based, self-directed interventions may be of particular service to Veterans unable or unwilling to seek professional services. Leveraging the partner relationship may enhance sustained program use, while strengthening the couple. Mission Reconnect may be an accessible, low-cost approach to support individual and couple well-being among GWOT Veterans and partners.

## Integrative health care practices – What are the relevant outcomes?

A. Kania-Richmond (1,2), A. Metcalfe (1,3)

- (1) Department of Obstetrics and Gynecology, Cumming School of Medicine, University of Calgary, Calgary, Alberta, Canada
- (2) Alberta Health Services, Calgary, Alberta, Canada
- (3) Department of Community Health Science, Cumming School of Medicine, University of Calgary, Calgary, Alberta, Canada

**Background:** Integrative health care (IHC) is an innovative approach to health care delivery. There is increasing focus on and demand for the evaluation of IHC practices. To ensure such evaluations capture their full scope, a clear understanding of the types of outcomes relevant to an IHC approach is needed.

**Objectives:** To describe the health domains and health outcomes relevant to IHC practices in Canada.

**Methods:** An online survey of Canadian IHC clinics. Survey questions were informed by the IN-CAM Health Outcomes Database. Descriptive statistics were used to summarize the data. Chi square tests were used to compare responses between clinic types and patient groups served.

**Results:** Surveys were completed by 21 clinics (response rate: 50%). Physical, psychological, social, individualized and holistic wellness were identified as applicable health domains by more than 90% of the clinics. Spiritual domain was the least relevant (70% of clinics). A number of relevant outcomes within each domain were identified, the most relevant being fatigue (physical domain), anxiety and stress (psychological domain), and the patient-provider relationship (social domain). Clinics that employ primarily conventional health practitioners are less likely to address overall wellbeing ( $p=0.04$ ), while clinics that provide care for a specialized patient population (i.e. cancer patients) or a mix of general and specialized patients are less likely to address religious practices ( $p=0.04$ ) or spiritual experiences ( $p=0.007$ ).

**Conclusion:** Outcomes across health domains should be considered in the evaluation of IHC models to generate an understanding of the full scope of effectiveness of IHC approaches.



## Parents and clinicians' opinions about probiotic therapy in prevention of pediatric antibiotic-associated diarrhea

S. Khanpour Ardestani (1), H.Q. Huynh (1), J. Robinson (1), L.A. Dieleman (2), H. Jou (1), S. Vohra (1)

(1) Department of Pediatrics, Faculty of Medicine & Dentistry, University of Alberta, Edmonton, Alberta, Canada

(2) Department of Medicine, Faculty of Medicine & Dentistry, University of Alberta, Edmonton, Alberta, Canada

**Background:** Probiotic therapy may be effective in preventing pediatric antibiotic-associated diarrhea (AAD). Some limitations in previous studies include lack of patient input in the development of minimal important difference (MID) and selection of other outcomes.

**Objectives:** a) To establish the MID that would prompt parents and clinicians to use probiotics to prevent AAD and b) To obtain parents and clinicians' opinion about the most important outcomes in clinical trials of AAD.

**Methods:** In this survey, pediatricians and parents of children presenting to the emergency department of a Canadian tertiary care children's hospital were approached. A range of potential MIDs were presented and participants selected the MID that they would require to use probiotics for AAD prevention. Additionally, participants were asked to rate a list of outcomes they would consider to be important in clinical trials of AAD.

**Results:** In total, 127 parents and 45 pediatricians were recruited. 55.7% of parents and 51.2% of clinicians reported they would use probiotics to prevent AAD if it would reduce the risk by 40% (from 19% to 12%; NNT = 13, RR = 0.61). Stool consistency and frequency, diarrhea duration, prevention of dehydration, disruption of normal daily activities, need for hospitalization and physician revisit were among the most important outcomes both groups required to be measured in clinical trials of AAD.

**Conclusion:** There is good agreement between parents and clinicians regarding how effective probiotics would need to be in preventing AAD to warrant use. This information along with outcomes they perceived important will help designing future trials.

## Exploring the effect of neurofeedback on postcancer cognitive impairment and fatigue: A pilot feasibility study

M. Luctkar-Flude (1), D. Groll (2), L. Beckett (3), J. Giroux (4), J. Tyerman (5)

(1) School of Nursing, Faculty of Health Sciences, Queen's University, Kingston, Ontario, Canada

(2) Departments of Psychiatry and Psychology, Faculty of Health Sciences, Queen's University, Kingston, Ontario, Canada

(3) Kingston Institute of Psychotherapy & Neurofeedback, Kingston, Ontario, Canada

(4) Kingston General Hospital, Cancer Centre of Southeastern Ontario, Kingston, Ontario, Canada

(5) Trent/Fleming School of Nursing, Trent University, Peterborough, Ontario, Canada

**Background:** Many cancer survivors experience ongoing distressing symptoms following treatment. Cancer-related fatigue and postcancer cognitive impairment (PCCI) or "chemobrain" are poorly managed due to lack of effective treatments. Neurofeedback brain training is a non-invasive, drug-free Complementary and Alternative Medicine (CAM) therapy reported to help with a variety of conditions including fatigue, depression, anxiety and cognitive decline.

**Objectives:** To determine feasibility of a randomized controlled trial investigating the effect of neurofeedback on PCCI and fatigue in post-treatment cancer survivors.

**Methods:** Twenty post-treatment breast cancer survivors are being recruited for this mixed methods study. Participants serve as their own wait-list controls and receive 20 NeuroOptimal™ sessions over a ten week period. Primary study outcomes are cognitive impairment as measured by an objective neurocognitive assessment, CNS Vital Signs, and a standardized patient-reported outcome (PRO) measure, the FACT-Cognition Scale. Secondary outcomes of fatigue, sleep quality and psychological symptoms will be measured by PROs.

**Results:** To date, 35 individuals have inquired about the study, 12 women met inclusion criteria, 5 have enrolled and completed or scheduled baseline testing, 1 has declined, and 6 enrolments are pending. Results of this pilot study have identified challenges to patient recruitment that will inform development of an RCT protocol.

**Conclusion:** This pilot study will contribute to a program of research aiming to determine efficacy, acceptability and safety of neurofeedback for cancer survivors experiencing PCCI, fatigue and other symptoms. This research will have significance to nurses and physicians who provide follow-up care and counseling to cancer survivors experiencing debilitating symptoms.

## Phytoestrogens and prostate cancer: A systematic review

*T. Martin (1), H. Fritz (2), D. Abdelfattah (1), B. Skidmore (1), K. Cooley (2), L. Balneaves (3), D. Fergusson (4), R. Breau (4,5), R. Wong (6), D. Seely (1,2,4)*

- (1) Ottawa Integrative Cancer Centre, Ottawa, Ontario, Canada
- (2) Canadian College of Naturopathic Medicine, Toronto, Ontario, Canada
- (3) University of Toronto, Toronto, Ontario, Canada
- (4) Ottawa Hospital Research Institute, Ottawa, Ontario, Canada
- (5) Ottawa Hospital, Ottawa, Ontario, Canada
- (6) McMaster University, Hamilton, Ontario, Canada

**Background:** A lower incidence of prostate cancer (PCa) in countries where phytoestrogen consumption is high has generated interest in its application for preventing and controlling PCa. A systematic review was conducted to assess the current level of evidence regarding phytoestrogen use and exposure for PCa prevention and control.

**Objectives:** To explore whether phytoestrogens (e.g. from soy, flax etc.) are safe and effective for treatment and prevention of PCa, and to assess whether there is an association between phytoestrogen intake or status and PCa risk and progression.

**Methods:** We searched AMED, Embase and MEDLINE on OVID, the Cochrane Library on Wiley, and CINAHL on EBSCO for human interventional or observational data pertaining to outcomes including PSA, disease progression, overall survival, mortality, adverse events and PCa incidence. Pre-clinical, ecological, and cross-sectional studies were not eligible.

**Results:** Of 2113 citations screened, 84 articles met inclusion criteria including: 33 RCTs, 16 uncontrolled trials, 9 cohort studies, 8 nested case-control studies and 18 case-control studies. Preliminary analysis of RCT outcomes does not suggest a beneficial effect from soy phytoestrogen on PSA. Preliminary analysis of observational studies does not support an association between serum or urinary phytoestrogen status and overall risk of a PCa diagnosis. However, five of five case control studies suggest an inverse association between dietary intake of soy and PCa diagnosis, favouring higher soy phytoestrogen intake.

**Conclusion:** Increased consumption of soy may lower risk of PCa incidence. More well-designed studies are needed to clarify the value of phytoestrogens in PCa control and treatment.

## Development of trust between conventional and CAM practitioners: Insights from physicians and osteopaths in Quebec

*C. Morin (1,2,3), I. Gaboury (1), J. Desrosiers (2)*

- (1) Department of Family Medicine and Emergency Medicine, Faculty of Medicine and Health Sciences, Université de Sherbrooke, Sherbrooke, Québec, Canada
- (2) School of Rehabilitation, Faculty of Medicine and Health Sciences, Université de Sherbrooke, Sherbrooke, Québec, Canada
- (3) Centre Ostéopathique du Québec, Montréal, Québec, Canada

**Background:** To achieve successful interprofessional collaboration, health professionals need trust one other's competencies and understand one other's values. In Quebec, increasing numbers of parents are seeking paediatric osteopathic care in addition to conventional medical care.

**Objectives:** This study explored enablers and barriers to the development of trusting relationships between osteopaths and physicians.

**Methods:** Semi-structured individual interviews with 10 physicians and 11 osteopaths involved in paediatric practice were carried out. Participants were selected using a purposeful sampling method among respondents to a survey on collaborative practice. Thematic analysis was performed.

**Results:** The strongest enabler of early development of trust between osteopaths and physicians was positive clinical results reported by parents. Successes fostered trust in one other's competencies and openness for future referrals. The chief barrier to development of trust was misunderstandings arising from discrepancies in discipline-related language. Further enablers included former training of the osteopath as an allied health practitioner, paediatric experience, respect of professional boundaries, and perceived safety of osteopathic interventions. Additional barriers were the lack of osteopathic educational standards and regulation, uncertainty regarding one other's roles, and paucity of interprofessional interactions and networking opportunities.

**Conclusion:** Both physicians and osteopaths relied primarily on patient clinical results and feedback to build professional trust between one another. Outreach is challenging for osteopaths when exchanging information with physicians. With regulation of osteopathy pending in Quebec, gaps remain between current practices and key requirements to develop trust successfully, such as professional contact, information about one other's roles, and effective communication skills.

## Inter-examiner reliability of osteopathic cranial palpatory diagnostic test

*C. Morin (1,2), L. Collette (1), A. Aubin (1)*

(1) Centre Ostéopathique du Québec, Montréal, Québec, Canada

(2) School of readaptation, Faculty of Medicine and Health Sciences, Université de Sherbrooke, Sherbrooke, Québec, Canada

**Background:** Manual therapy approaches use palpation to determine dysfunctions, apply effective treatments and monitor patient evolution. However, reliability of palpation is generally poor. Osteopathy is one of the manual therapies that struggle to establish good inter-examiner reliability for cranial palpatory diagnostic.

**Objectives:** This study aims to evaluate the inter-examiner reliability of osteopathic cranial palpatory diagnostic test used to identify severe dysfunction on young children's temporal bones.

**Methods:** Children 5 to 18 months old were recruited from community for a double-blinded assessment of temporal bone dysfunction. Two osteopaths, using a seven-step palpation protocol, alternatively evaluate temporal bones ( $n = 22$ ) of each child. Definition of a severe temporal bone dysfunction was previously validated and no clinical information's were available for the examiners. Inter-examiner reliability for determining the presence or absence of severe temporal bone dysfunction was assessed using Kappa ( $k$ ) coefficient and reported in conjunction with observed agreement ( $P_o$ ). Kappa indice was interpreted as suggested by Landis and Koch:  $<0.40$  poor-to-fair,  $0.41-0.60$  moderate,  $0.61-0.80$  substantial, and  $0.80-1.00$  almost perfect.

**Results:** Estimate of inter-examiner reliability was  $k = 0.65$ , 95% CI  $[0.35-0.94]$  for all temporal bones with an observed agreement ( $P_o$ ) of 82%. According to Landis and Kock's classification, results are considered as substantial agreement.

**Conclusion:** Osteopathic cranial palpatory diagnostic test used to identify severe temporal bone dysfunction is a reliable test when performed by osteopaths following a protocol of palpation. It can be used to monitor evolution and treatment efficacy for young children in clinic as well as for research purpose.

## The quantity and quality of complementary and alternative medicine clinical practice guidelines: Systematic review and assessment using AGREE II

*J.Y. Ng (1), L. Liang (1), A.R. Gagliardi (1)*

(1) Division of Support, Systems and Outcomes, Toronto General Research Institute, University Health Network, Toronto, Ontario, Canada

**Background:** Complementary and alternative medicine (CAM) use is often not disclosed by patients, and is unfamiliar to healthcare professionals. This may lead to underuse of beneficial CAM therapies, and overuse of other CAM therapies containing potential harms. No prior research has examined resources that support patient-provider discussions about CAM.

**Objectives:** This research assessed the quantity and quality of CAM guidelines.

**Methods:** A systematic review was conducted to identify CAM guidelines. MEDLINE, EMBASE and CINAHL were searched from 2003-2015. The National Guideline Clearinghouse, National Center for Complementary and Integrative Health website, and two CAM journals were also searched. Eligible guidelines published by non-profit agencies on herbal medicine, acupuncture, or spinal manipulation for adults with any condition were assessed with the Appraisal of Guidelines, Research and Evaluation II (AGREE II) instrument.

**Results:** Among 17 eligible guidelines, average domain scores were clarity of presentation (85.3%), scope and purpose (83.3%), rigour of development (61.2%), editorial independence (60.1%), stakeholder involvement (52.0%) and applicability (20.7%). Quality varied within and across guidelines; 14 were recommended with conditions for modification; none were unconditionally recommended.

**Conclusion:** Guidelines that scored well could be used by patients and healthcare professionals as the basis for discussion about the use of these CAM therapies. Guidelines that achieved variable or lower scores could be improved according to specifications in the AGREE II instrument. Future research should identify CAM therapies other than those reviewed here which are supported by sufficient evidence to serve as the basis for guideline development.

## Integrative oncology research in action: Stimulating dialogue and collaboration between health care providers

*D. Seely (1,2), A. Seely (2,3,4), T. Asmis (2,3,4), R. Auer (2,3,4), K. Thavorn (2,4), D. Fergusson (2,4), T. Ramsay (2,4), D. Maziak (2,3,4), S. Laurie (2,3,4), J. Ennis (1), E. McDonell (1), L. Zhao (1), A. Fazekas (2)*

- (1) Ottawa Integrative Cancer Centre, Ottawa, Ontario, Canada
- (2) Ottawa Hospital Research Institute, Ottawa, Ontario, Canada
- (3) Ottawa Hospital, General Campus, Ottawa, Ontario Canada
- (4) University of Ottawa, Ottawa, Ontario, Canada

**Background:** The Thoracic Peri-Operative Integrative Surgical Care Evaluation (POISE) Trial is a three-stage project culminating in a pragmatic randomized controlled trial (RCT) for people with thoracic cancer. The trial will evaluate a multi-agent integrative care palette delivered by naturopathic doctors alongside standard care.

**Objectives:** To create a process for defining the protocol and integrative interventions through collaboration amongst a multidisciplinary team of complementary and conventional health care providers.

**Methods:** The co-principal investigators (naturopathic doctor and surgeon) assembled a multidisciplinary team to serve on Steering and Intervention Development Committees (SC and IDC). These committees include representatives from naturopathic medicine, surgery, anaesthesiology, medical oncology, radiation oncology, health economics, research, pharmacy, psychology and physiotherapy. A series of SC meetings and IDC consultations were conducted to develop a systematic method for defining interventions and the study protocol.

**Results:** Potential interventions were identified from a practice review, evidence review, and expert opinion and scored on practical usage, safety, goals, feasibility/scalability and evidence. SC and IDC voted on interventions to include/exclude. The resulting interventions will be piloted in a single-arm study prior to the RCT. The study population includes gastric, esophageal and lung cancer patients eligible for complete resection randomized to standard care with or without integrative care. Trial outcomes include quality of life, side effects, cost effectiveness, overall survival, recurrence, biological impact, safety, adherence and qualitative outcomes.

**Conclusion:** Engaging a multidisciplinary team of naturopathic and conventional practitioners and researchers has enabled an effective means of collaboration for the development of the Thoracic POISE Trial.

## Why do patients seek out integrative healthcare centres?

B. Wellman (1), M. Kelner (1)

(1) Social & Behavioural Health Sciences Division, Dalla Lana School of Public Health, University of Toronto, Toronto, Ontario, Canada

**Background:** Integrative healthcare is moving from the margins to the mainstream, with the emergence of integrated clinical centres in hospitals, medical institutions, and community settings. These centres integrate conventional medical care with complementary care.

**Objectives:** To use the modified Andersen Model to understand the motives, experiences, and degree of satisfaction of patients attending two integrative care centres in two urban areas in Ontario.

**Methods:** We use grounded theory to analyze the responses of twenty patients at each of the two integrative centres. Our analytical steps included coding the text for themes, linking the themes into theoretical models, and displaying and validating the models.

**Results:** While some scholars have arrived at a working definition of ‘integrative healthcare’, the general public remains unsure of what it means. We found users of integrative healthcare to be mainly middle-aged, university educated affluent women with extensive social networks. They sought care primarily for prevention and well-being as well as chronic health issues. Not only did they report that their symptoms decreased, they expressed strong satisfaction with their care, experiences, and health results.

**Conclusion:** Today consumers are drawn to a model of care that combines a personal, holistic approach with the scientific expertise of conventional medicine. Patients want to act as partners with their healthcare professionals. Between scepticism about authorities, easy access to health information and a range of health practitioners and products, integrative healthcare is becoming increasingly attractive.

## Poster Presentation Abstracts

### The quality of life of children under chiropractic care as assessed by the PROMIS-25 and PROMIS parent proxy

J. Alcantara (1), J. Ohm (2), J. Alcantara (3)

- (1) The International Chiropractic Pediatric Association, Media, PA, USA and Research Consultant, Life Chiropractic College West, Hayward, CA, USA
- (2) The International Chiropractic Pediatric Association, Media, PA, USA and Private Practice of Chiropractic, Media, PA, USA
- (3) Alcantara Chiropractic-Philippines, Metro Manila, Philippines

**Background:** Patient reported outcomes (PROs) provide personal and social context that are meaningful on a day-to-day basis. PROs such as quality of life of children are solicited either from parents/guardians or children. Analysis of QoL can guide interventions to improve health.

**Objectives:** To compare children’s ratings of their quality of life prior to chiropractic care to ratings provided by parents within a chiropractic practice-based research network.

**Methods:** Ethics approval was provided by Life University (Marietta, GA). Children (age 8-17 years) under chiropractic care and their parent/guardian were asked to complete the PROMIS25 and PROMIS proxy measures, respectively, to assess the child’s QoL. Data analysis utilized the PROMIS Assessment Center<sup>SM</sup>, converting raw data to a T score metric (mean = 50; SD = 10). The greater the T score, the greater the measured QoL domain. Agreement of child and parent’s proxy-report was assessed via intraclass correlation coefficient (ICC) via 2-way ANOVA.

**Results:** Two hundred and thirty three parent/child pairings completed the questionnaires. Based on parent/child T scores, parents underestimated the domains of mobility (49.58/50.35), fatigue (44.18/46.75); peer relationships (50.76/



51.61) and pain interference (47.25/47.99) while their anxiety (49.20/47.44) and depression (55.73/45.62) were overestimated. Agreement was fair with the following ICC values: mobility (0.411), anxiety (0.394), fatigue (0.384); peer relationships (0.301) and pain interference (0.430) but poor agreement with depression (0.138).

**Conclusion:** There is fair agreement between parent/guardian and children's rating of their QoL except for depression. Further research is supported given that parents decide the care of their child based on their assessment.

## Generalized anxiety disorder and hypoglycaemia symptoms improved with diet modification: A case report

M. Aucoin (1), S. Bhardwaj (1)

(1) Research and Clinical Epidemiology, Canadian College of Naturopathic Medicine, Toronto, Ontario, Canada

**Background:** Several studies suggest a relationship between improved nutrition and better mental health outcomes. Observational evidence suggests that a relationship may exist between high glycemic index diets and the development of anxiety and depression symptoms. This relationship may occur through neuroendocrine changes as a result of reactive hypoglycaemia. However, as no interventional studies assessing this relationship in a psychiatric population have been completed, the possibility of a causal link is unclear.

**Objectives:** This case report illustrates the potential role of dietary glycemic index in the pathogenesis and progression of generalized anxiety disorder.

**Methods:** AB is a 15-year-old female who presented with concerns of generalized anxiety disorder and hypoglycaemia symptoms. Her diet consisted primarily of refined carbohydrates. Recommendations were made to increase dietary protein, fat and fiber at all meals.

**Results:** AB was compliant with the recommendations and reported a substantial decrease in anxiety symptoms as well as a decrease in the frequency and severity of hypoglycaemia symptoms. A brief return to her previous diet caused a return of her anxiety symptoms, followed by improvement when she restarted the prescribed diet.

**Conclusion:** This case strengthens the hypothesis that dietary glycemic index may play a role in the pathogenesis and progression of mental illnesses such as generalized anxiety disorder and subsequently, that dietary modification as a therapeutic intervention in the treatment of mental illness warrants further study.

## Impact before the finish line: The value of organizational action research methodology in integrative health research

B. Barberree (1)

(1) Health, Leadership Studies, Royal Roads University, Victoria, British Columbia, Canada

**Background:** This research addressed the ongoing challenge of how to advance regulation of massage therapy (MT) in Alberta. The current unregulated environment means inconsistent education and practice standards, and haphazard complaints and disciplinary processes. In 2009, Alberta's health ministry delivered recommendations for regulation of MT, but a regulatory college has yet to be established.

**Objectives:** The main objective of this study was to determine leadership strategies for advancing regulation of MT in Alberta. Three subquestions informed this. 1. Elicit stakeholder perceptions about regulation, 2. Identify obstacles to regulation, and 3. Identify organizational supports needed to advance regulation.

**Methods:** The Organizational Action Research (OAR) approach expects an iterative and interactive process. A multi-method approach was utilized. A focus group and interviews informed an electronic survey delivered to a diverse population of key informants.

**Results:** Participants offered opinions about current state, ideal outcome, and obstacles to advancing regulation. Participants indicated there is an appetite for MT regulation, which should occur consistent with the existing national practice standards. Market share protection is the greatest obstacle, and maintaining focus on the public best interest is a challenge.

**Conclusion:** The transition from planning to action often thwarts implementation of great ideas. Interaction among investigation participants has the power to cause change. Undertaking this research did so. Within 30 days of the project's launch, communication about and activities related to MT regulation in Alberta increased. OAR may be a useful means for causing the required dialogue to produce necessary shifts in the realm of integrative health.

## A craniosacral osteopathic approach can help improve olfactory function in patient with a diminished sense of smell following head trauma

M. Barrette (1), K. Legault (1), N. Pomerleau (1), M. Ricard (1)

(1) Centre Ostéopathique du Québec, Montréal, Québec, Canada

**Background:** The incidence of dysosmia after a head trauma is frequent and rarely treated. The loss of smell may have a major psychological impact.

**Objectives:** This study aims to gather information about the effects of osteopathic treatments for an individual with dysosmia following a head injury.

**Methods:** A 43-year-old woman seeks medical attention for dysosmia after a fall. The medical history reveals a diminished sense of smell without changes in taste. During the osteopathic exam, several craniosacral dysfunctions are found: membranous compression, dysfunction of the cranial base and facial bones, restriction of the ethmoid bone and a laterally inflected sacrum. Four osteopathic treatments over a three-month period were performed in order to normalize cranial dysfunctions and inflected sacrum.

**Results:** Normalization of the osteopathic craniosacral dysfunctions induces notable increase in the variety of perceived smells. Several hypotheses have been reported with regard to the origins of cranial post-traumatic dysosmia. Dysosmia in our subject is possibly attributed to the inflammation or mechanical obstruction of the olfactory clefts. The corrections of the dysfunctions would improve the flow of odorous molecules to the sensorial epithelium.

**Conclusion:** Cranial osteopathic treatments seem to have had a positive effect on the recovery of the sense of smell after a traumatic incident, while there are currently few medical solutions. Further research is required to determine the dysfunction's exact mechanism: inflammatory or obstructive.

## Can postural manual osteopathic intervention improve temporo-mandibular joint (TMJ) opening in a client with scoliosis?

M. Bétournay (1), A. Desgagnes (1), B. Tran-Nguyen (1)

(1) Centre ostéopathique du QC, Montréal, Québec, Canada

**Background:** Conventional treatments of temporo-mandibular disorder (TMD) are mainly given by dentists, doctors and physiotherapists. Treatments consist primarily of education on oral-motor functions and local exercises. TMJ splints and medications are often prescribed.

**Objectives:** The objective of this single-case study is to demonstrate that manual osteopathic postural treatment could increase the efficacy of dentistry in clients with TMD.

**Methods:** Initial TMJ opening was 23mm, measured with a caliper. The first osteopathic treatment addressed dysfunctions of the diaphragm, psoas, thoraco-lumbar region, and cervical fascias. Breathing and myofascial release on a foam roller were giving as exercises. After this first treatment, patient noted a marked improvement in TMJ opening. Treatment was repeated with addition of a right anterior iliac correction and occipital base release. After five treatments, TMJ opening was 38mm and the patient was pain free.

**Results:** Following unexpected outcome from parietal treatment of the spine and pelvis on mouth opening, we questioned ourselves on potential effects of postural chain correction on the TMJ. The treatment applied aimed relief of postural chain tension with manual treatment combined with exercises for stretching and strengthening the pelvic girdle. TMJ range of motion was normal after 5 treatments without TMJ treatment.



**Conclusion:** Co-morbidity of postural troubles and TMJ dysfunction is frequent. A global approach to these problems including osteopathic evaluation and treatment could increase efficiency of orthodontics mainly the TMJ range of motion and the reduction of pain.

## Hand self-Shiatsu for sleep problems in persons with chronic pain: A pilot study

*C. Brown (1), G. Bostick (2), L. Bellmore (3)*

- (1) Department of Occupational Therapy, Faculty of Rehabilitation Medicine, University of Alberta, Edmonton, Alberta, Canada
- (2) Department of Physical Therapy, Faculty of Rehabilitation Medicine, University of Alberta, Edmonton, Alberta, Canada
- (3) Artists' Health Centre, Family & Community Medicine, Toronto Western Hospital, University Health Network, Toronto, Ontario, Canada

**Background:** Sleep latency and maintenance are common problems, particularly for persons experiencing chronic pain. A bi-directional relationship between sleep problems and chronic pain exists, demonstrating that sleep problems are exacerbated by pain. Mounting evidence supports the use of non-pharmacological sleep interventions that may be utilized in pain management programs.

**Objectives:** This study examines the outcomes of teaching a standardized hand self-Shiatsu protocol for sleep latency to adults living with chronic musculoskeletal pain, to be applied prior to bedtime.

**Methods:** A case-series design with participants acting as their own controls was employed, as this is useful for hypothesis generation for novel interventions. Data on sleep efficiency, latency and maintenance, sleep beliefs and pain intensity were collected at baseline using actigraphy and standardized self-report questionnaires. After one week of baseline data collection, participants were taught hand self-Shiatsu. Follow-up data were collected at two and eight weeks post-intervention.

**Results:** The study included twelve participants with varied experiences of musculoskeletal pain. While no apparent changes in objective data were noted at the follow-up periods compared to baseline, there was a trend toward improved self-reported sleep latency and duration. No participants experienced adverse effects. As increasing unbroken sleep was of greater concern to participants than total sleep time, hand self-Shiatsu may prove useful when applied during nighttime awakenings as well as prior to bedtime.

**Conclusion:** This cost-effective, pragmatic intervention showed promising results. Further studies with a larger cohort and stronger control of treatment fidelity are warranted, as is exploring the mechanism of action.

## An n-of-1 study of homeopathic treatment of fatigue in patients receiving chemotherapy

*D. Brulé (1), D. Seely (2)*

- (1) University of Toronto, Leslie Dan Faculty of Pharmacy, Toronto, Ontario, Canada
- (2) Ottawa Integrative Cancer Centre, Ottawa, Ontario, Canada

**Background:** Chemotherapy related fatigue has been described as a subjective feeling of physical, emotional, and/or cognitive tiredness. Homeopathic treatments have the potential to relieve chemotherapy related fatigue, are easy to deliver and demonstrate strong compliance. The n-of-1 trial design is a scientifically rigorous method of studying particular reversible clinical conditions such as chemotherapy related side effects.

**Objectives:** To determine whether conducting an n-of-1 trial of individualized homeopathic treatment of chemotherapy side effects is feasible.

**Methods:** Recruitment took place at the Ottawa Integrative Cancer Clinic (OICC). Potential participants were assessed for eligibility and if eligible asked whether they would be interested in participating. Within 5 days of a chemotherapy treatment the participant was given individualized homeopathic treatment for 14 days. As per the n-of-1 design, placebo or verum was given in randomly assigned blocks of two. Recruitment rates were monitored and changes in fatigue was measured using the Multi-dimensional Fatigue Inventory (MFI) and the EORTC-QLQ-C30.

**Results:** 68 people were assessed between February 2014 and February 2015. 4 patients were eligible for the study and 1 consented to participate. The one participant was enrolled in the study, followed through 6 cycles of chemotherapy, and completed all treatment and outcome measures. The fatigue outcome scores were inconclusive.

**Conclusion:** While recruitment was challenging, the n-of-1 study design is feasible in this population. No conclusions on the efficacy of homeopathy can be made in this context. Study design amendments should be explored to lessen chances of having significant baseline score differences.

## Can manual osteopathic techniques performed on the small and large intestines reduce the symptoms associated with irritable bowel syndrome?

J. Choquette (1), S. Plante (1), D. Sabourin (1)

(1) Centre Ostéopathique du Québec, Montreal, Quebec, Canada

**Background:** Irritable Bowel Syndrome (IBS) is a complex gastrointestinal condition which has been proven difficult to control through lifestyle changes and medication.

**Objectives:** The objective of this case study is to document effects of local visceral osteopathic techniques on IBS symptoms on a 42 years old female patient non-respondent to usual medical interventions.

**Methods:** A female patient with 10 years IBS diagnostic complaining of abdominal pain with a score of 7.5/10 on the Short Form McGill Pain Questionnaire received three osteopathic treatments at three-week intervals. The patient was instructed to complete a daily journal detailing her lifestyle habits and symptoms 2 weeks prior to the first treatment and up to 1 month after the end of osteopathic treatments. Following initial assessment, significant cranio-sacral dysfunctions were normalized before visceral techniques were applied to the small and large intestines.

**Results:** The patient identified five types of moderate pain and rated the intensity 7.5/10 on the McGill Questionnaire before the first treatment. At the second treatment, two types of light pain were remaining and pain was rated 3/10. One month after the final treatment, she reported no pain and rated it 0/10.

**Conclusion:** Manual visceral osteopathic techniques performed on the small and large intestines appear to reduce the types and intensity of IBS abdominal pain in this patient non-respondent to medication. However, effects of manual osteopathic treatments on other IBS symptoms such as diarrhea, constipation or bloating could not be identified with the daily journal of the patient.

## Embodied CAM: Getting inside therapy performances

S. Croke (1)

(1) University of Leeds (alumnus), School of Healthcare, Leeds, UK

**Background:** Current complementary and alternative medicine (CAM) research suffers from many flaws and inconsistencies. To provide some remedy for this, this study set out to explore therapy performances in an embodied way and discover where any lessons for research may lie.

**Objectives:** Taking this unique researcher's perspective, the study asked, "What can a CAM practitioner's perspective of studying CAM practice teach CAM researchers about researching CAM?"

**Methods:** Theatricality, a novel methodology and method, was developed and trialled as an adjunct to ethnography in 5 CAM centres across 4 European countries. This enabled the researcher to step inside each performance and engage in a similar depth to participants. The resulting descriptive, observational and interview data was coded, embodied, and then subject to 'performative critique' analysis, with results compared across different countries/sites.

**Results:** Findings revealed that performances of therapy were impacted by the 'spaces' where they were delivered, creating both unique *potential* and *limitations* for these events. Concepts of 'space' included practical, intellectual and spiritual aspects, which affected participants differently across the different populations.

**Conclusion:** This study augments existing research methods and, through enacting a *more* holistic research paradigm, explores the potential also for CAM research and CAM therapies to be impacted by the 'spaces' and 'contexts'

where they are performed. Viewing the complexities of practice together reveals an interconnected nature to these, suggesting an integral role for intentionality in both the act of therapy and patient outcomes. This is something all researchers should consider to improve and enrich their own work.

## **NADA ear acupuncture and breast cancer treatment-related hot flushes and night sweats (HF&NS): Evaluating 10 years of service data**

*B. de Valois (1), T. Young (1), P. Thorpe (1), L. Kelly (1)*

(1) Supportive Oncology Research Team (SORT), Lynda Jackson Macmillan Centre, Mount Vernon Cancer Centre, Northwood, Middlesex, United Kingdom

**Background:** Following research into using the NADA five-point ear acupuncture protocol to manage breast cancer treatment-related hot flushes and night sweats (HF&NS), we opened a service for patients which we evaluated after 10 years.

**Objectives:** To assess outcomes reported by service users, and compare with research results.

**Methods:** Breast cancer survivors experiencing  $\geq 4$  HF&NS per 24-hour period attended an intake interview, followed by 8 NADA treatments in small groups of  $\leq 5$  women. They completed: Hot Flush Diaries, measuring frequency and severity over 2-week periods; the Women's Health Questionnaire (WHQ) measuring physical and emotional wellbeing; and the Problem Rating Scale (PRS), measuring bothersomeness of HF&NS. These were completed at baseline, end-of-treatment (EOT), and 4 and 18 weeks post-EOT. We compared service user (SU) data with our previous research participants (RP).

**Results:** Out of 271 referrals, there were 145 evaluable service users. The baseline daily average of HF&NS was 11.3 for SU and 10.5 for RP ( $n=51$ ). At EOT, the mean % reduction was 42.8% for SU, and 35.9% for RP. Reductions in frequency for both groups were significant at all time points, with no significant differences between groups. Both groups showed significant improvement in WHQ domains Anxiety/Fears, Depressed Mood, Sleep Problems, and Vasomotor Symptoms. PRS scores were similar for both groups, with statistical and clinically significant improvement for each measurement point over baseline.

**Conclusion:** Outcomes for both groups were consistent at EOT. While completion of treatment was high amongst SU, referral and data collection procedures require improvement.

## **Using daily self-administered indirect moxibustion to ST 36 *zusanli* to reduce chemotherapy-induced pancytopenia: A feasibility study**

*B. de Valois (1), T. Young (1), R. Glynne-Jones (2), C. Scarlett (1), F. Staeblerh (3)*

(1) Supportive Oncology Research Team (SORT), Lynda Jackson Macmillan Centre, Mount Vernon Cancer Centre, Northwood, Middlesex, United Kingdom

(2) Mount Vernon Cancer Centre, Northwood, Middlesex, United Kingdom

(3) Integrated Medical Practitioner, London, United Kingdom

**Background:** CIP (chemotherapy-induced pancytopenia, including neutropenia, anaemia, thrombocytopenia) is a serious side effect of various chemotherapy agents that decrease bone marrow activity, causing dose reductions or delays to chemotherapy with subsequent impact on survival. Studies indicate that stimulating acupuncture points with moxibustion (a form of heat used in traditional east Asian medicine) may reduce CIP.

**Objectives:** To assess the feasibility of teaching cancer patients to self-administer daily moxibustion to acupuncture point ST-36 *zusanli* for the duration of chemotherapy treatment.

**Methods:** An uncontrolled, single-arm feasibility study aims to recruit 25 breast, colorectal, or gynaecological cancer patients for whom granulocyte-colony stimulating factor (G-CSF) is not indicated. The primary outcome is adherence to daily self-administered moxibustion measured by daily moxa diaries. Secondary measures include blood counts, variation to planned chemotherapy schedule, health-related quality of life measured by FACT-An and FACT-N, Patient Activation Measure (PAM), chemotherapy-related toxicities, and adverse events of moxibustion. Participants are

taught the procedure in two meetings, and are supported at home by a video and instruction leaflet. The procedure takes less than 10 minutes per day; it is applied up to 10 days before the start of, and continues until three weeks after the end of chemotherapy treatment.

**Results:** Ethical approval was obtained in October 2015; recruitment opened on 29<sup>th</sup> February 2016.

**Conclusion:** This paper discusses the protocol for this study, as well as our experiences of introducing a novel and little-known intervention into an oncology service in the UK's National Health Service (NHS).

## Refining behavioural interventions for a pragmatic trial of integrative oncology care for thoracic cancer

*J. Ennis (1), D. Seely (1,2), A. Seely (2,3), P. Chamberland (3), C. Herrington (1), J. Threader (4), E. McDonnell (1), L. Zhao (1)*

(1) Ottawa Integrative Cancer Centre, Ottawa, Ontario, Canada

(2) Ottawa Hospital Research Institute, Ottawa, Ontario, Canada

(3) Ottawa Hospital, General Campus, Ottawa, Ontario Canada

(4) Royal Melbourne Hospital, Melbourne, Australia

**Background:** The Thoracic Peri-Operative Integrative Surgical Care Evaluation (POISE) Trial has the goal of improving thoracic cancer care. The trial will evaluate a multi-agent integrative care program delivered by naturopathic doctors (NDs) in conjunction with standard care for thoracic cancer patients undergoing curative surgery. Three of the intervention domains, mental/emotional, physical and nutritional, involve behavioural recommendations.

**Objectives:** Develop a systematic process to establish consensus among a multidisciplinary team of health care providers and researchers on the interventions considered.

**Methods:** Domain leads with relevant clinical experience (psychologist, physiotherapist, ND) and research staff scored potential interventions on practical usage, safety, goals, feasibility/scalability and evidence base. The trial's Steering Committee then selected interventions to pilot test. The interventions were further adapted to the phases of standard care (neo-adjuvant, peri-operative, adjuvant, long-term maintenance) based on consultations with multidisciplinary health care providers.

**Results:** The mental/emotional domain includes audio-recordings with psycho-education, visualization, breathing exercises, mindfulness, gentle movement and meditation. The physical domain includes moderate intensity aerobic plus resistance exercises 5 days/week and preoperative inspiratory muscle training for patients with impaired pulmonary function. The nutritional domain supports incorporation of a Mediterranean diet with additional targeted recommendations (e.g. cruciferous vegetables, low glycemic index). Recommendations will be individualized based on current diet and clinical status.

**Conclusion:** The multidisciplinary approach to designing the behavioural integrative intervention has expanded a strong collaboration between naturopathic and conventional medical practitioners. The approach has identified recommendations likely to benefit patients receiving care for thoracic cancers that will be used in the Thoracic POISE trial.

## The effect of the compression of the fourth ventricle (CV4) on uterine contractions at term – A quasi-experimental study

*A-M. Fafard (1), N. Trottier (2), A-J. Morand (3)*

(1) Canadian College of Osteopathy, Vancouver Campus, British Columbia, Canada

(2) Canadian College of Osteopathy, British Columbia, Canada

(3) Collège d'Études Ostéopathique de Montréal, Québec, Canada

**Background:** Studies have indicated that it is favorable for pregnant women to be medically induced before 42 weeks. Presently, available labour induction methods all have secondary effects. The compression of the fourth ventricle (CV4), a manual osteopathy technique, has been said to start uterine contractions, but insufficient evidences exist to support it.

**Objectives:** The study of the effect of the CV4 on uterine contractions on pregnant women at term. This was to assess the potential use of this technique as an induction method and its safety on this population.

**Methods:** Open pilot study. Patient recruitment was done through interested and consenting women (40+ weeks pregnant) of the Three Sisters Obstetric and Family Medicine Clinic, Canmore, Alberta. The number of uterine contractions were measured by a professional using an external tocography unit 20 minutes before and after the CV4 technique. The CV4 was applied by a manual osteopathy therapist student of the Canadian College of Osteopathy.

**Results:** Using Non-parametric testing, the result of a sample of 8 women held a P-value Wilcoxon signed-rank test of 0.1624 is  $> 0.05$ .

**Conclusion:** This did not allow us to conclude that the number of contraction following CV4 increased. Further studies needed including women who have reached 38-week of pregnancy, or had previous c-section deliveries, and, measuring the change in the frequency of the contractions post CV4.

## An animal model to study the neural mechanisms of massage therapy in chronic complete spinal cord injury

N. Gaudreault (1,2), P. Lévesque (2), É. Boyer-Richard (1), A. Telonio (2), A. Frigon (2)

(1) School of Rehabilitation, Faculty of Medicine and Health Sciences, Université de Sherbrooke, Sherbrooke, Québec, Canada

(2) Department of Pharmacology-Physiology, Faculty of Medicine and Health Sciences, Université de Sherbrooke, Sherbrooke, Québec, Canada

**Background:** Although massage therapy (MT) has been shown to be effective in reducing pain in spinal cord-injured (SCI) subjects, the underlying neural mechanisms are poorly understood.

**Objectives:** We used a well-established animal model (feline model) of complete SCI to study the neural mechanisms of MT.

**Methods:** Two cats were implanted with intramuscular electrodes to chronically record the activity of several hindlimb muscles (EMG, electromyography). Approximately one month after implantation, the spinal cord was transected at low thoracic levels. Experiments were conducted >9months after SCI. During testing, cats were placed on a cushion with one hindpaw fixed to a rigid frame and the other to a robotic arm. For MT, distal to proximal lengthwise strokes were applied by a trained therapist to the left gastrocnemii muscles with a calibrated pressure of 3N at a frequency of 0.5 Hz. EMGs were obtained before, during and after 5 min of MT.

**Results:** Preliminary data showed that stable recordings were obtained from the massaged muscles, without noise in the signals. Regression analyses also showed that the amplitude of rhythmic EMG bursts evoked by MT in the lateral and medial gastrocnemii and in the tibialis anterior were not altered over the course of the 5 min of MT.

**Conclusion:** Chronically implanted electrodes in hindlimb muscles of the spinal-transected cat provided stable noise-free EMG recordings with MT, even in muscles that directly received the applied pressure. The model provides a controlled substrate to study the neural and biomechanical mechanisms of MT in chronic complete SCI.

## Fibromyalgia mitigation using homeopathic remedy and diet

A. Gellman (1)

(1) Institute of Holistic Nutrition, North York, Ontario, Canada

**Background:** Fibromyalgia (FM) is a chronic pain syndrome characterized by constant, chronic widespread pain that persists over a prolonged period of time. The presence of nitrites on urinalysis may indicate the presence of bacteria, leading to immune weakness (Lundberg et al. 1997). Homeopathy has been used clinically to alleviate symptoms of FM.

**Objectives:** To investigate the effects of nutrition and homeopathy on FM diagnosed patients.

**Methods:** In this prospective case series, 14 patients were followed for 6 months and were prescribed an initial anti-inflammatory diet followed by homeopathic tissue salts (month 3). Progress was monitored using a patient



questionnaire outlining pain level. Pre and post data on weight, body fat, total fluid in the body as a percentage, bone mass, visceral fat, total muscle mass, nitrites (Chemstrip10 urinalysis), and blood pressure were gathered. Patients were asked to rate their experience on a monthly basis using a patient diary.

**Results:** All patients reported a decrease in pain as well as weight loss. 89% experienced systolic blood pressure regulation. 78% of people experienced diastolic blood pressure improvements and heart rate regulation. Patient diary reports highlighted improvement in depression symptoms, anxiety, sleep, and energy levels. No reduction in nitrites on the urinalysis was reported.

**Conclusion:** Nutrition and homeopathy may be an effective combination treatment for FM. The lack of a control group may have caused placebo like results. An additional source of error may be that two factors; diet and tissue salts were tested and the improvements cannot be accredited to either one.

## The evolution of the regulated medical marijuana market in Canada

*P. Grootendorst (1,2), M. Shim (1)*

(1) Leslie Dan Faculty of Pharmacy, University of Toronto, Toronto, Ontario, Canada

(2) Department of Economics, McMaster University, Hamilton, Ontario, Canada

**Background:** Canada has, since 1999, permitted the medical use of cannabis. Prior to 2014, under the Marihuana Medical Access Regulations (MMAR), Health Canada approved patients, provided the patient's physician was supportive. Patients could grow their own cannabis plants or purchase from Health Canada. After 2014, under the Marihuana for Medical Purposes Regulations (MMPR), physicians could independently authorize cannabis use and patients were required to purchase cannabis from Licensed Producers (LPs), commercial growers approved and regulated by Health Canada.

**Objectives:** We describe trends over the period 2001 to 2016 in: patient and physician program participation; the number of plants patients were authorized to grow; the number of LPs selling cannabis; and the distribution of prices.

**Methods:** We graphed time trends using data obtained from Health Canada data and LP websites.

**Results:** 31,738 patients and 5,381 physicians participated in the MMAR by March 2014, the last month of the program. By April 2016, under the MMPR, 59,967 patients participated; physician participation declined to 1,451. The number of LPs increased from 11 in 2014 to 20 in 2016. The number of Health Canada approved cannabis plants per capita varied markedly by province. Average dried cannabis prices has been about \$8.20/gram since June 2014. However there is a wide price variation across cannabis strains, and THC/CBD potencies.

**Conclusion:** Physician participation has declined under the MMPR program; participating physicians typically prescribe to a large number of patients. The LP market shows signs of robust growth, spurred no doubt by the impending legalization of cannabis.

## The effect of the three diaphragms technique on the level of perceived stress

*L. Hanson (1)*

(1) Canadian School of Osteopathy, Graduate Thesis, Vancouver, British Columbia, Canada

**Background:** Long-term stress can have a significant impact on physical and psychological health.

**Objectives:** To determine if the effect of the three diaphragms technique (TDT) reduces levels of perceived stress.

**Methods:** A cross-over design involving 16 subjects with long-term stress as identified by the Perceived Stress Scale (PSS10). Subjects were randomly divided into two groups. Group 1 participated in an osteopathic 'clean up' treatment followed by two sessions of the TDT. Secondly, they participated in one music therapy session. Group 2 participated in the same treatments but in opposite order. The treatments took place one week apart. Stress was measured using the PSS10 and the Psychological Stress Measure (PSM9).

**Results:** A significant decrease in scores was found after the osteopathic clean-up for the PSS10 but not for the PSM9 although it was in the anticipated direction for both groups scores combined (PSS10 4.3/40 points, 95% CI [2.1, 6.3],  $p < .001$ ; PSM9 5.1/72 points, 95% CI [-1.9, 8.3],  $p = .145$ ). A greater decrease was found after the TDT for both PSS10

and PSM9 (PSS10 7.4/40 points, 95% CI [4.5, 10.2]; PSM9 11.7/72 points, 95% CI [4.5, 10.2],  $p < .001$ ). No significant change was identified in either the PSS10 or PSM following music therapy (PSS10 0.1/40 points, 95% CI [-1.9, 2.0],  $p = .950$ ; PSM9 1.5/72 points, 95% CI [-1.9, 4.9],  $p = 0.385$ ).

**Conclusion:** These findings suggest that an individualized osteopathic clean-up treatment and TDT can reduce perceived high stress levels.

## The osteopath, an indispensable collaborator in a combined case study of orthodontics and orthognathic surgery

I. Hue (1)

(1) Centre Ostéopathique du Québec, Montréal, Québec, Canada

**Background:** Problems of irradiating and persistent pain are common following Orthognathic Surgery.

**Objectives:** The objective of this case study is to document the effects of complementary cranial osteopathic treatments on the postoperative symptoms in a 53 years old male.

**Methods:** In this case study, the patient complains of tinnitus, and tension headaches. He mentions a loss of feeling in the chin, pain in the right temporomandibular joint (TMJ), limited jaw opening, and pain during functional activities such as chewing, yawning, speaking. In addition to the conventional orthodontic treatment, the patient received eight cranial osteopathic treatments over a six-month period.

**Results:** Osteopathic evaluation revealed decreased cranial motility, principally in the right anterior and posterior quadrants of the cranium. Osteopathic normalization of the masticatory and membranous cranial structures leads to an increase in mandibular range of motion and reduce tinnitus and headaches. In this case, reduced motility of the dura mater may have lead to the decreased cranial motility thus affecting temporal bones/TMJ. Functional movements, mainly governed by the trigeminal nerve, could also be affected by pain and muscle tension.

**Conclusion:** The results of this case study suggest that cranial osteopathy treatments, including membrane approach, can induce changes in the postoperative conditions in the sens of improvement of most symptoms. Complementary cranial osteopathic treatments, in this case, help the patient to regain fundamental functions relate to TMJ. More studies on the effects of cranial osteopathic treatment on postoperative orthognathic surgery are needed.

## “Healthy families, healthy kids”: Promoting healthy behaviours in a group-based setting

V. Kwan (1), L. Solomonian (2)

(1) Canadian College of Naturopathic Medicine, Toronto, Ontario, Canada

(2) Associate Professor, Canadian College of Naturopathic Medicine, Toronto, Ontario, Canada

**Background:** Addressing risk factors for chronic, non-infectious disease in childhood is a critical strategy in reducing the most significant causes of morbidity and mortality in North America. Group-based delivery is an effective way to promote preventative strategies to parents while fostering resilience, and may be a cost-effective component of the public health strategy of wellness promotion.

**Objectives:** This study assesses the feasibility of a group-based wellness-promotion program for parents of young children.

**Methods:** The program consists of six 2-hour interactive health promotion sessions to groups of parents/caregivers. Sessions are facilitated by trained 4<sup>th</sup> year naturopathic medical interns under the supervision of naturopathic doctors. Participants complete a survey at the start of the program, and six weeks post completion. Focus groups will be held this summer.

**Results:** Initial results suggest high satisfaction with the program, and a trend toward increased frequency of health-promoting behaviours. Focus groups will guide deeper reflection, allowing for refinement of curriculum and delivery. Due to a lack of validated outcome measures, and the small n-value, this iteration may be simply hypothesis generating.



**Conclusion:** Group based education promotion may be an effective method of motivating behaviour change for parents of young children. Early results suggest that a group-based, program of wellness promotion may be a feasible means of reducing risks for disease.

## Pilot study of acupuncture to treat anxiety in children and adolescents

*B. Leung (1), W. Takeda (2)*

- (1) Faculty of Health Sciences, University of Lethbridge, Alberta, Canada
- (2) Elements Physical Therapy and Acupuncture Ltd, Lethbridge, Alberta, Canada

**Background:** Anxiety disorders are the most common mental health disorder in the paediatric population, with prevalence estimated as high as 40%. Current treatments for paediatric anxiety have had limited success. There is growing demand for treatment options in this population. Recently, studies of acupuncture have shown promise in the treatment of anxiety. Acupuncture is also relatively safe, even in children. Thus, research is needed to study the use of acupuncture in children and adolescents with anxiety.

**Objectives:** This study will explore the use of acupuncture in the treatment of pediatric anxiety, and evaluate the feasibility of the randomization process, adherence to the intervention by this population, and changes to measures of anxiety.

**Methods:** This pilot study is a randomized control trial of children with anxiety, age 8 to 15, and living in Lethbridge, AB and surrounding communities. Twenty-two participants will be enrolled into the study, and randomized to one of two groups (i.e. acupuncture or wait-list control) using block randomization. A registered nurse, who is blinded to the participant's group assignment, will administer the measurement tools (i.e. HAM-A, CGI, MASC-II) at baseline and follow-up. A licensed acupuncturist will provide five weekly acupuncture sessions.

**Results:** Data collection is currently underway. We anticipate results will be available for the INCAM Symposium.

**Conclusion:** This pilot study is one of the first to investigate the feasibility of acupuncture treatment for paediatric anxiety. In addition, we will determine how well the treatments are tolerated and acceptable to patients and their families.

## Vitamin D and prostate cancer: A systematic review

*T. Martin (1), H. Fritz (2), L. Weeks (1), B. Skidmore (1), K. Cooley (2), L. Balneaves (3), D. Fergusson (4), R. Breau (4,5), R. Wong (6), D. Seely (1,2,4)*

- (1) Ottawa Integrative Cancer Centre, Ottawa, Ontario, Canada
- (2) Canadian College of Naturopathic Medicine, Toronto, Ontario, Canada
- (3) University of Toronto, Toronto, Ontario, Canada
- (4) Ottawa Hospital Research Institute, Ottawa, Ontario, Canada
- (5) Ottawa Hospital, Ottawa, Ontario, Canada
- (6) McMaster University, Hamilton, Ontario, Canada

**Background:** The relationship between vitamin D and prostate cancer (PCa), and the role of vitamin D in the treatment and prevention of this disease is controversial. A systematic review was conducted to understand the scope of the current base of evidence around vitamin D and PCa.

**Objectives:** To assess the clinical effectiveness and safety of vitamin D for treatment and prevention of PCa, and to assess associations between vitamin D supplementation or status and PCa risk and progression.

**Methods:** We searched AMED, Embase and MEDLINE on OVID, the Cochrane Library on Wiley, and CINAHL on Ebsco for human interventional or observational data pertaining to outcomes including PSA, disease progression, overall survival, mortality, adverse events and risk of PCa incidence. Pre-clinical, ecological, cross-sectional, and studies based solely on food intake were not eligible.

**Results:** Of 2746 citations screened, 65 articles met the inclusion criteria including: 6 reports of 5 randomized controlled trials (RCTs); 22 uncontrolled trials; 13 cohort studies; 20 nested case-control studies, and 4 reports of 3

case-control studies. Two of three RCTs showed greater PSA improvement in the vitamin D arm. Observational studies do not support an association between serum 25(OH)D status and overall risk of a PCa diagnosis. Four of four cohort studies assessing mortality suggest an inverse association, favouring higher serum 25(OH)D levels. Long-term vitamin D3 supplementation appears to be safe at doses of 2,000-4,000IU/day.

**Conclusion:** More well-designed, better powered RCTs are needed to clarify the value of vitamin D in PCa control and treatment.

## Development of an intervention palette of natural health products for a pragmatic integrative thoracic cancer trial

*E. McDonell (1), D. Seely (1,2), A. Seely (2,3), C. Spooner (4), J. Ennis (1), L. Zhao (1)*

(1) Ottawa Integrative Cancer Centre, Ottawa, Ontario, Canada

(2) Ottawa Hospital Research Institute, Ottawa, Ontario, Canada

(3) Ottawa Hospital, General Campus, Ottawa, Ontario Canada

(4) Paradigm Naturopathic Medicine, Vernon, British Columbia, Canada

**Background:** The Thoracic Peri-Operative Integrative Surgical Care Evaluation (POISE) Trial aims to improve thoracic cancer care. The trial will evaluate a multi-agent integrative care program delivered by naturopathic doctors (NDs) in conjunction with standard care for thoracic cancer patients undergoing curative surgery. Natural Health Products (NHP) constitute one of four domains included in the integrative care program.

**Objectives:** Develop a systematic process to establish consensus among a multidisciplinary team of health care providers and researchers on the NHPs to be considered.

**Methods:** NHPs were identified through a clinical practice survey and systematic literature review and scored on practical usage, safety, goals, feasibility/scalability and evidence base. The trial's Steering Committee then selected the NHPs to be piloted as part of a protocolized palette including standard core interventions and optional interventions to manage specific symptoms. Safety, known risks and drug interactions were evaluated using industry and professional monographs, a literature review and consultations with pharmacists.

**Results:** This process resulted in a palette of NHPs adapted to four phases of standard care (neo-adjuvant, peri-operative, adjuvant and long-term maintenance). The palette is designed to address patient needs and include agents targeting inflammation, immune function, nutritional deficiencies, side effects, surgical complications, wound healing, and direct anti-neoplastic actions.

**Conclusion:** The multidisciplinary approach has fostered a strong collaboration between conventional and complementary care providers. The process has identified NHPs expected to benefit patients with thoracic cancers, and could serve as a model for the development of clinical practice guidelines for integrative cancer management.

## Integrated mindfulness-based health promotion: Fostering the mindful mind of university students

*H. Ray (1)*

(1) Department of Health and Physical Education, Faculty of Health, Community and Education, Mount Royal University, Calgary, Alberta, Canada

**Background:** Today's population of university students are experiencing rising levels of stress, anxiety and depression, with a growing number of students contemplating suicide. With many factors predisposing students' to declining health concerns in the future, the need to better support student physical, psychosocial and spiritual health is imperative. Although integrative mindfulness-based health promotion programs are highly recognized in many clinical and non-clinical populations, very little attention is dedicated to building such education into the core-curriculum supporting university students.

**Objectives:** This narrative review seeks to explore mindfulness-based health promotion core-curriculum dedicated to promoting holistic health and enhancing self-care, stress management and resiliency in university students.

**Methods:** A literature search resulted in seven studies meeting the inclusion criteria for the narrative review.

**Results:** Despite an abundance of research on mindfulness education in clinical and non-clinical populations, only a handful of studies explored mindfulness and health promotion in post-secondary curriculum. Five major categories emerged suggesting mindfulness-based health promotion education may: 1) Enhance self-care and university student quality of life, 2) Counteract stress and anxiety, improving student health and performance, 3) Provide a positive student experience and builds self-esteem, 4). Foster greater awareness and rational perspectives in stressful situations, and 5) Promotes student resiliency and ability to overcome challenges.

**Conclusion:** Narrative findings demonstrate a host of benefits associated with mindfulness-based health education in post-secondary curriculum. Future research is recommended to explore both the short and long-term influence of mindful health promotion on the physical, psychosocial, cognitive and spiritual health outcomes of participating university students.

## The effects of osteopathic treatment on snapping hip syndrome in ballet and contemporary dancers: A longitudinal study

C. Ryder (1)

(1) Collège d'Études Ostéopathiques (CEO), Montreal, Quebec, Canada

**Background:** Snapping hip is characterized by snapping sensation felt when the hip is flexed and extended. Research shows the lack of recognition and treatment among dancers.

**Objectives:** This study aims to document effects of osteopathic treatment on (1) pain and discomfort using the visual analog scale (VAS), (2) quality of life using the International hip outcome tool 12 (iHOT-12), and (3) abnormal displacement of the structures of the hip, using ultrasound on dancers with snapping hip syndrome.

**Methods:** The study uses a longitudinal design. Baseline measurements include ultrasound evaluation performed by a physiatrist, iHOT-12, VAS, and scale of the intensity of hip snapping. Subjects then received individual osteopathic treatments with focus on pelvis and hip dysfunctions once a week over a three-week period. Post treatment measurements include iHOT-12, ultrasound, VAS, and intensity of snap. The iHOT-12 was repeated two and three weeks post-treatment. Significance was set at  $p = 0.05$  for statistical analyses.

**Results:** Twenty-five dancers met inclusion criteria and were included in the study. Post treatment results indicate reduction of pain ( $p = 0.01$ ) and intensity of snap ( $p = 0.02$ ), using paired t-tests. Greatest improvements of quality of life on iHOT-12 were noted three weeks after the last treatment, using ANOVA tests. Ultrasounds were analysed using the Wilcoxon signed rank test and revealed statistically significant improvement for psoas snapping at the end of hip extension ( $p = 0.01$ ), end hip flexion ( $p = 0.014$ ) and for snapping of the tensor fascia lata (TFL) ( $p = 0.017$ ).

**Conclusion:** Osteopathic treatment has positive effects on snapping hip syndrome in these dancers.

## A series of case reports regarding the effect of massage therapy on sleep quality in individuals with post-traumatic stress disorder (PTSD)

B. Sumpton (1), A. Baskwill (1)

(1) Massage Therapy, School of Hospitality, Recreation, and Tourism, Humber Institute of Technology and Advanced Learning, Toronto, Ontario, Canada

**Background:** Post-traumatic stress disorder (PTSD) occurs when an individual re-experiences a traumatic event leading to persistent symptoms of increased arousal causing significant distress or impairment for a month or longer. The prevalence of PTSD in Canada is estimated at 2.4%. A commonly experienced symptom is poor sleep quality. Previous studies suggest that massage therapy (MT) may be an effective treatment for poor sleep quality experience by individual with PTSD.

**Objectives:** The objective was to examine the outcomes of an MT treatment plan intended to improve sleep quality for individuals with PTSD.

**Methods:** This series of case reports describes a 10-week MT treatment plan provided by Registered Massage Therapists at Sutherland-Chan Clinic's Belleville location. Three individuals with PTSD were recruited using promotional posters in the community. Treatment focused on improving sleep quality. Outcomes were measured using sleep diary, Pittsburgh Sleep Quality Index, and the Leeds Sleep Evaluation Questionnaire.

**Results:** There were no significant changes between data at baseline and those collected throughout the series. All three participants completed the treatment plan and no significant adverse events were noted.

**Conclusion:** For these participants, MT did not predictably impact sleep quality. This contradicts findings of previous studies in which MT improved sleep for individuals with poor sleep quality due to exposure to traumatic events. There is need for further understanding of how MT affects sleep.

## Attitudes and knowledge towards interprofessionalism among naturopathic students and a collaborating family health team

*L. Tummon Simmons (1), K. Cooley (1)*

(1) Canadian College of Naturopathic Medicine, Toronto, Ontario, Canada

**Background:** Attitudes among health care practitioners have been shown to impact their effectiveness in collaborative practice. Naturopaths have scope and interest in collaboration, however there is a lack of quantitative evidence evaluating their attitudes towards interprofessional collaboration. Understanding these attitudes and those of cooperating practitioners may assist in future integrative practice.

**Objectives:** To examine the attitudes of naturopathic interns (NI), as well as family healthcare team members towards regulated health care practitioners.

**Methods:** NIs from the Canadian College of Naturopathic Medicine (CCNM) and Wise Elephant Family Health Team (WE-FHT) in Toronto and Brampton Ontario were surveyed using the validated Attitudes to Health Professionals Questionnaire (AHPQ) (20 item, visual analogue scale) between May and July 2016. Paper copies of the informed consent and questionnaire were administered to all NIs (n = 131) and WE-FHT members (n = 16). Responses were anonymous, scales were scored in duplicate to enhance accuracy. In addition to demographic information (age, gender, self-rated experience in interprofessional settings), knowledge and attitudes towards nine healthcare professions (medical doctors, nurses/nurse practitioners, pharmacists, naturopathic doctors/interns, chiropractors, registered massage therapists, physiotherapists, traditional Chinese medical practitioners, registered dietitians) were evaluated. This study received approval from CCNM's research ethics board.

**Results:** 88 responses (67.2% response rate) were collected from naturopathic interns. Response rates and overall findings of the survey will be available for presentation.

**Conclusion:** It is feasible to assess knowledge and attitudes of NIs and members of a practicing family health team. Other conclusions will be drawn based on descriptive analysis of questionnaires for NIs and WE-FHT.

## Investigation of the attitudes and experiences of TCM professionals towards the use of electronic health records in integrative medicine

*J.H.K. Wong (1), W.W.K. Lin (1)*

(1) PuraPharm/HerbMiners Informatics Limited, Units 201-207, Wireless Centre, Hong Kong Science Park, Hong Kong

**Background:** PuraPharm/HerbMiners has a tripartite research collaboration with the University of Toronto, the University of Sydney, and the University of Hong Kong to construct research platform for integrative medicine clinical and research.

**Objectives:** This study aimed to investigate the attitudes and experiences of TCM professionals towards the use of electronic health records in Integrative Medicine.

**Methods:** Questionnaires were distributed to 298 professional practitioners and academics, 148 private TCM practitioners and 40 TCM academics to investigate TCM professionals' attitudes towards the uptake of health information

technology in the clinical setting and TCM research. The research team also interviewed current users ( $n = 100$ ) of HerbMiners Clinical Management System (TCMA) to investigate user experiences of the HerbMiners program, and to identify potential improvement measures.

**Results:** The results showed that electronic-prescriptions compared with handwritten prescriptions resulted in increased efficiency of patient care and better communications with clinical staff including workflow and staff productivity, protecting patient confidentiality and providing medical information (such as drug information) to TCM practitioners.

**Conclusion:** The study suggests that the electronic health records can improve some aspects of person-centred care. Further research should include continuous measurement against targets, and feedback and reporting to health service managers and communities, standardizing the terminology used by TCM practitioners for integrative medicine.

## Integration of Traditional Chinese Medicine food therapy for hypertension control among Chinese Canadians: A pilot randomized controlled trial

*P. Zou (1), C.L. Dennis (2), R. Lee (3), M. Parry (4)*

- (1) Faculty of Applied and Professional Studies, School of Nursing, Nipissing University, Toronto, Ontario, Canada
- (2) Lawrence Bloomberg Faculty of Nursing and Department of Psychiatry, University of Toronto, Toronto, Ontario, Canada
- (3) School of Nursing, McMaster University, Hamilton, Ontario, Canada
- (4) Lawrence Bloomberg Faculty of Nursing, University of Toronto, Toronto, Ontario, Canada

**Background:** Unhealthy dietary behaviours are identified as the most important modifiable risk factor for hypertension in the Chinese population. Chinese Canadians prefer to incorporate Traditional Chinese Medicine (TCM) food therapy into their hypertension control.

**Objectives:** To determine the feasibility of the DASHNa-CC intervention, a newly designed dietary intervention incorporating TCM food therapy for hypertension control; to examine the potential effects of the DASHNa-CC intervention on blood pressure, health-related quality of life, and health service utilization among Chinese Canadians in community.

**Methods:** This study is a pilot randomized controlled trial with 60 Chinese Canadians, at least 45 years old and with grade one hypertension recruited in community. The control group received usual care and the intervention group received usual care plus the DASHNa-CC intervention. The DASHNa-CC intervention consisted of a written manual, two classroom sessions, and one telephone booster call to provide DASH diet pattern, sodium reduction advice, principles of TCM food therapy, and antihypertensive foods recommended by TCM.

**Results:** Participants were highly satisfied with the intervention and adhered to the trial protocol. At 8 weeks post-randomization, those in the intervention group had greater reductions in systolic blood pressure [ $3.8\text{mmHg}$ ,  $t(55) = -1.58$ ,  $p = 0.12$ ] and higher physical health scores [ $t(55) = 2.13$ ,  $p = 0.04$ ] compared to those of the control group. There were no group differences in health care utilization.

**Conclusion:** It is feasible to deliver the DASHNa-CC intervention in a Chinese Canadian community. The DASHNa-CC intervention may decrease blood pressure and improve health-related quality of life for Chinese Canadians.

## Application of Traditional Chinese Medicine food therapy for hypertension control: A narrative review of Chinese literature

*P. Zou (1)*

- (1) Faculty of Applied and Professional Studies, School of Nursing, Nipissing University, Toronto, Ontario, Canada

**Background:** Unhealthy dietary behaviours are identified as the most important modifiable risk factor for hypertension in the Chinese population. Chinese Canadians prefer to incorporate Traditional Chinese Medicine (TCM) food therapy into their hypertension control.

**Objectives:** To determine the feasibility of the DASHNa-CC intervention, a newly designed dietary intervention incorporating TCM food therapy for hypertension control; to examine the potential effects of the DASHNa-CC intervention on blood pressure, health-related quality of life, and health service utilization among Chinese Canadians in community.

**Methods:** This study is a pilot randomized controlled trial with 60 Chinese Canadians, at least 45 years old and with grade one hypertension recruited in community. The control group received usual care and the intervention group received usual care plus the DASHNa-CC intervention. The DASHNa-CC intervention consisted of a written manual, two classroom sessions, and one telephone booster call to provide DASH diet pattern, sodium reduction advice, principles of TCM food therapy, and antihypertensive foods recommended by TCM.

**Results:** Participants were highly satisfied with the intervention and adhered to the trial protocol. At 8 weeks post-randomization, those in the intervention group had greater reductions in systolic blood pressure [3.8mmHg,  $t(55) = -1.58$ ,  $p = 0.12$ ] and higher physical health scores [ $t(55) = 2.13$ ,  $p = 0.04$ ] compared to those of the control group. There were no group differences in health care utilization.

**Conclusion:** It is feasible to deliver the DASHNa-CC intervention in a Chinese Canadian community. The DASHNa-CC intervention may decrease blood pressure and improve health-related quality of life for Chinese Canadians.