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Abstract

The following are abstracts of oral and poster presentations given at the 7th IN-CAM Research Symposium - Evaluating CAM Practices: Effectiveness, Integration, Economics & Safety, and the 4th HomeoNet Research Forum, a pre-Symposium event. The IN-CAM Research Symposium was held November 2 to 4, 2012 at the Leslie Dan Faculty of Pharmacy, University of Toronto, in Toronto, Ontario, Canada. For more information, please visit: www.incamresearch.ca

KEYWORDS: complementary and alternative medicine, integrative health care/medicine, safety, economics, effectiveness

Author Notes: *The following abstract were submitted by the deadline of June 29, 2012. The abstracts have been reproduced directly from the material submitted by the primary author, without alterations by the editorial staff of this journal. Insufficiency of preparation, including grammar, spelling, style, syntax, and usage, are of the authors.
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PRE-SYMPOSIUM EVENT – 4TH HOMEONET RESEARCH FORUM ABSTRACTS

4th HOMEONET RESEARCH FORUM – ORAL PRESENTATIONS:

A critical examination of evidence regarding the use of individualised homeopathy in the treatment of bipolar spectrum disorders

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Introduction: Diagnosis of bipolar spectrum disorders has substantially expanded in scope due to changing diagnostic criteria. As a result, the societal and economic impact of these disorders has garnered greater public awareness and concern. The aim of this paper is to identify evidence in regards to individualised homeopathic treatment of patients with symptoms of bipolar spectrum disorders.

Method: A literature review was undertaken to determine published evidence of the effect of individualised homeopathic treatment for bipolar spectrum disorders.

Results: Ten relevant articles were identified. Claims for the effect of homeopathy for bipolar disorders exclusively include documentation of single cases. To date, no clinical trials have been published. Strengths of single case reports include detailed descriptions of patients’ symptom pictures and length of follow-up periods. Weaknesses include the varied styles and quality of published case reports, lack of triangulation for content validation, and a lack of standardization making cross case comparison unreliable.

Conclusion: Reliable documentation of the successful effect of homeopathy in treatment of bipolar spectrum disorders does not currently exist. The number of published case reports is low and the quality of reports varies considerably. No randomized clinical trials (RCTs) have yet been published; however the applicability of the RCT to professional homeopathic practice is generally considered poor. Modified RCTs (Verhoef et al., 2005; Baker et al., 2004), Whole Systems Research (WSR) (Ritenbaugh et al., 2003; Verhoef et al., 2005) and Formal Case Study (FCS) formats (Thompson, 2004) address many of these weaknesses, offering improved cross-case comparison and generalisability to clinical practice.
Homeopathic practice in Canada: A baseline

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Background: Homeopathic medicine is scheduled for regulation in Ontario in March 2013, but systematic information is not available on the practitioners of this medicine.

Objectives: 1. Determine if an internet survey is an effective method to contact practicing homeopaths, and 2. Learn about homeopathic practitioners’ education, clinical practice methods and patients, their role in CAM practice, and their support of the proposed regulations.

Methods: An internet survey was designed, tested, and sent to email addresses of practitioners and graduates supplied by the major homeopathic associations and schools of homeopathic medicine. The survey was open for one month. Results were analyzed using descriptive statistics.

Results: Over 80% of the addresses were valid and 20% responded, but only 52% of respondents completed the survey. The homeopaths who responded were mainly older than 40 years of age, female, trained in Canada, and had practiced a median of 9 years. About one-half held other health-related diplomas. They felt that following homeopathic principles was critical to clinical success and most treated with 200C potencies. Over 75% supported regulation in Ontario but were concerned about patient freedom of choice. Over one-half view homeopathy as the main CAM therapy and over one-third see themselves as primary health care providers.

Conclusion: An internet survey will reach most homeopaths, but nearly 20% do not have valid email addresses and many will not complete a 20 minute survey. Regulation is supported by the majority of Ontario homeopaths and they believe that practice success is tied to following homeopathic clinical principles.
Identifying clinical limitations in a study of the homeopathic treatment of Attention Deficit/Hyperactivity Disorder

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Background: An open label clinical trial of the homeopathic treatment of attention deficit/hyperactivity disorder (ADHD) using individualized homeopathic treatment from 2 experienced homeopaths is ongoing.

Objectives: To explore the homeopathic clinicians’ experiences of participating in a clinical trial with an emphasis on how they felt they had to modify “usual practice” during the trial and what impact that may have had on the clinical outcomes of participants.

Methods: A series of qualitative in-person interviews were conducted at month 18 of the clinical trial (90% completion) with the 2 study homeopaths.

Results: The clinicians’ responses can be categorized into 3 main themes: 1) they reported feeling that concomitant modalities such as dietary and nutritional support and lifestyle counseling would have enhanced the effectiveness of the homeopathic medications and improved the outcomes for many participants. These elements of the participants’ diet and lifestyle represented, in homeopathy principles, a “maintaining cause” and/or “obstacle to cure”. 2) Clinicians felt limited by the inability to use medicines unavailable for use over the counter (OTC) in Canada. 3) Clinicians felt that a greater understanding of homeopathic principles by the participants may have led to greater engagement with the treatment and better outcomes.

Conclusion: Future study designs should strive to allow practitioners to practice “usual care” including encouraging concomitant therapies such as dietary and lifestyle counseling and access to all homeopathic remedies (including those currently unavailable for OTC use). Study results may be enhanced by a participant (and parent) education session on homeopathic treatment and expectations.
Feasibility and design of an open label pilot study of homeopathic treatment of Attention Deficit/Hyperactivity Disorder

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**Background:** An open label pilot study of individualized homeopathic treatment of attention deficit/hyperactivity disorder (ADHD) is ongoing, with data collection scheduled to end December 2012. One of the reasons for doing a pilot study was to assess the feasibility of the planned study design.

**Objectives:** 1. to describe the feasibility of the study recruitment plan; and 2. to explore factors related to the length of time participants are enrolled in the study.

**Methods:** Participants with ADHD (confirmed by our study psychiatrist) aged 6-16 years were scheduled to receive individualized homeopathic treatment for 10 consultations provided at approximately 1 month intervals. Clinicians were able to change remedies and potencies throughout the study based on their clinical judgment.

**Results:** Thirty-six participants were recruited over 11 months (6 girls, 30 boys; mean age 10.3; age range 6-16). To date, 21 participants have completed all 10 consultations, 8 have withdrawn, and 7 remain in active treatment. The median time to complete all 10 consultations was 11.0 months (range 10.0-16.5) and it took the clinicians on average 5.7 (range 1 –9) consultations to identify a clinically effective remedy (as determined by the clinician) for these participants.

**Conclusion:** The recruitment strategy employed is feasible; however, it is important to note that significant time will be needed to recruit larger sample sizes. Participants generally take longer than 10 months to complete 10 consultations. Number of months in treatment may be a more feasible way to bound future studies (as opposed to number of consultations).
Promoting healthy therapeutic relationships and conducting effective consultations with child patients: Results of a Delphi study seeking the opinion of experts in the homeopathic treatment of children

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Background: CAM interventions are commended for being patient-centred and individualized requiring in-depth consultations and particular skills from the practitioner. It is documented that a positive therapeutic relationship may benefit the patient but it may also help the practitioner understand the nature of the patient’s complaint. Homeopathic case taking is the process of eliciting symptoms from a patient whereby the practitioner perceives what needs to be cured. Much has been written about how to develop a therapeutic relationship and conduct an effective homeopathic consultation with adults, but literature on how to ensure the same in children is sparse.

Objectives: The aim was to investigate the experience and opinion of experts regarding their approaches to homeopathic children’s case taking, to explore their possible commonalities and differences, and to identify best practices.

Methods: A Delphi method study was conducted. Two tiers were completed; a semi-structured survey and an interview. Sixteen experts from around the globe were selected; experienced homeopaths with knowledge and skills in children’s case taking and treatment participated in the study. Emerging themes from the study were explored, in the light of current thinking on pediatric care from diverse range of disciplines.

Results: The following consensus themes for best practices in children’s case taking emerged: Using Observation, Engaging and Interviewing the Child, Parent-Child Information and Etiology/Causation.

Conclusion: The identified themes are transferable and may benefit other CAM practitioners who work with children and wish to conduct effective consultations and promote healthy therapeutic relationships.
Homeopathic treatment of depression in intersex patients: Specifically in Klinefelter and Polycystic Ovarian Syndrome

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Background: Polycystic Ovarian Syndrome (PCOS) occurs in 1 in 15 women. Klinefelter Syndrome (KS) occurs in 1 in 1000 births and is considered one of the most common chromosomal variations. Intersex individuals are born with possible anatomical and physiological sexual differences, resulting in many different intersex variations. Intersex best describes genital, gonadal and chromosomal variants, which are neither completely ‘male’ nor ‘female.’ Depression often occurs in these individuals; the significant hormone imbalance is the primary dynamic shift and the social affect is the second.

Objectives: To examine the effectiveness of homeopathic treatment for depression in Intersex individuals specifically those with Klinefelters Syndrome (KS) and women with Polycystic Ovarian Syndrome (PCOS).

Methods: This method of research is an integration of case study analysis. Each case has been approached using a Hahnemannian Homeopathic Method. Cases of KS and of PCOS have been examined.

Results: Each of the cases have been managed using subsequent intercurrent remedies. For the KS patients Sepia 1M and Causticum 200ch/1M manage the hormonal alteration; lending to a balance of mental/emotional symptoms such as irritability, lack of focus and concentration as well as anger. Natrum Muriaticum and Pulsatilla have helped the each of the individuals underlying presentation that is a result of social trauma and isolation. The PCOS cases have been managed with Lachesis 200ch for the hormonal disturbances, which result in despondency and weepiness. Sulphur 30ch and Sepia 1M have been used to help reduce the hirsutism, weight gain and obsessive compulsive behavior; this reduction in the symptom presentation has enabled the patients to have a more positive approach to life and to the condition at hand.

Conclusion: Homeopathic treatment for depression in these individuals is an excellent approach. More diligent trials are needed.
Ontario Homeopathic Practitioners: Are homeopaths prepared to be regulated?

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Introduction: Homeopaths are in the process of being granted self-regulatory status under the Regulated Health Professions Act (RHPA) of Ontario.

Objectives:
1. To describe the demographic characteristics, education/training, and practices of homeopaths currently practicing in Ontario.
2. To identify homeopathic practitioner attitudes regarding regulation under the RHPA.
3. To determine the proportion of practitioners eligible for regulation according to the draft Competency Profile for Entry-to-Practice set by the Transitional Council of the College of Homeopaths of Ontario.
4. To determine how homeopaths who do not meet the competency profile standards differ from those who meet the standards.

Methods: A questionnaire was e-mailed to all self-identified homeopaths living or practicing in Ontario (n=831).

Results: The response rate was 56% (n= 442/788, 43 ineligible participants). The majority of respondents (76%) were female and half were born in Canada. Over one third (39.6%) have a Bachelor’s degree and 90% have a diploma/certificate/degree in homeopathy. Half of our respondents received their homeopathic training between 2006 and 2011. One-quarter practice homeopathy full-time. Initial adult visits are commonly 90-120 minutes and cost $101-$175. The majority of respondents agree/strongly agree that regulation will benefit the public (75%), practitioners (67%) and improve patient care (67%). Analysis for objectives 3 and 4 is ongoing.

Conclusion: Homeopathy in Ontario is a female-dominated, often part-time practice composed of a large number of relatively new practitioners. Education and training is varied, which makes setting entry to practice standards challenging. Overall, homeopaths support regulation in Ontario.
A study to evaluate the effect of homeopathic concentrations of potassium dichromate on tracheal secretions in critically ill patients

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Background: Endotracheal secretions are a risk factor for extubation failure and current strategies to reduce secretions have had limited success or excessive toxicity. A European trial demonstrated that homeopathic potassium dichromate (C30) reduced the duration of mechanical ventilation in COPD patients with excessive tracheal secretions.

Objectives: The purpose of this study was to evaluate the impact of potassium dichromate on the quantity of tracheal secretions in a general population of critically ill patients.

Methods: Patients with excessive tracheal secretions (≥ 20 mucopurulent [MP]/day) were randomized to receive 5 globules of either homeopathic potassium dichromate or placebo (Boiron Canada) sublingually every 12 hours for 10 days. Quantity of secretions was analyzed by repeated measures ANOVA.

Results: The study was prematurely discontinued after 30 months due to slow enrollment and infrastructure limitations. Out of 59 potentially eligible patients, 27 substitute decision makers were approached for consent, with sixteen patients enrolled (target sample size 60). Data were unavailable for one patient and another patient had consent withdrawn after day 4. There were no significant differences in the quantity of secretions from day 1 to 10.

Conclusions: Potassium dichromate (C30) did not appear to reduce the quantity of tracheal secretions compared to placebo, however, conclusions are limited due to the small sample size.
Is homeopathy efficacy related to the placebo effect? Results of a series of controlled trials to test the efficacy of complex and single homeopathic remedies as compared to standard care (antibiotics) in treatment of calves with diarrhea and cows with mastitis

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Background: It has been argued that any effects of homeopathy can be attributed to the placebo effects. Studying homeopathy in veterinary medicine provides an opportunity to test this argument.

Objectives: To conduct a series of controlled trials to test the efficacy of complex and single homeopathic remedies as compared to standard care (antibiotics) in treatment of calves with diarrhea and cows with mastitis.

Methods: Seven open-label experiments were conducted where animals were randomly assigned to two groups - antibiotics and homeopathic remedies. 5 trials studied calves with diarrhea (total N=96); 2 trials studied cows with mastitis (total N=74). Complex remedies by Heel, Germany, and single remedies by local companies were administered; some of the remedies were the same as those used in treatment of similar human diseases.

Results: In 4 of 5 trials the average duration of diarrhea in calves in the homeopathy group was 1.1-2.2 days less than in the standard care group. The duration of mastitis in cows in the homeopathy group was 2.4 days shorter in one trial and 1.9 days shorter in the other trial compared with the standard care group.

Conclusion: The positive results of in these trials in calves and cows are not consistent with the explanation that the therapeutic effect of homeopathic remedies is solely placebo effect. Further research with homeopathic remedies is warranted.
A critical examination at the use of homeopathy as a treatment option for Polycystic Ovarian Syndrome

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**Background:** Polycystic Ovarian Syndrome (PCOS) is the most common reproductive endocrine condition. Diagnostic indications for PCOS are: no monthly ovulation, high levels of androgens and/or cysts on the ovaries. Secondary symptoms to PCOS are hirsutism, hair loss, acne, weight gain, and infertility. Conventional treatment of PCOS includes the use of oral contraceptives, anti-androgens and topical applications such as post-laser therapy.

**Objectives:** The objective of this review was to investigate the potential use of homeopathy in the treatment of PCOS and explore methodological approaches used in studies assessing the interventions for PCOS that may be applied to future homeopathic clinical trials for this condition.

**Methods:** A literature review was conducted using search words Polycystic Ovarian Syndrome, PCOS, Homeopathy, Complementary Medicine, Obesity, Hirsutism and Androgen Excess. Databases searched included: National Centre for Complementary and Alternative Medicine, Homeopathy Research Institute, European Committee for Homeopathy, National Centre for Homeopathy and others.

**Results:** No randomized clinical trials in homeopathy for PCOS have been conducted. Eight relevant studies were identified. Two case series with positive outcomes for the homeopathic treatment of ovarian cysts were identified and assessed. Countless allopathic studies have been conducted with PCOS; two were identified as being relevant to the design of future homeopathic trials.

**Conclusion:** There is very little evidence of the effects of homeopathy in PCOS. The allopathic studies identified show promising approaches for future clinical trials in homeopathy; specifically for PCOS and other women’s conditions. Preliminary evidence from case series suggest that more rigorous study of homeopathy as an intervention for PCOS is warranted.
Pharmacological characteristics of homeopathic remedies and its application in renal failure: From bench to bedside

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Background: The prevalence of urinary tract disorders (UTDs) in the developing countries has steadily increased during the last three decades.

Objectives: The investigations were to assess the real-life efficacy of classical homeopathic treatment and the potential to reduce conventional medication dosage.

Methods: It has used reduced doses of homeopathic remedies for estimation of UTDs patients with stable impairment of renal function. A total of 48 adult female patients with moderately impaired renal function and symptomatic UTDs were included in the investigations. Urine cultures were carried out. Patients were monitored clinically and with various laboratory tests. Homeopathic remedies concoction divided by milligrams of creatinine per 100 ml were orally administrated for 12 days. 6 patients were excluded from final analysis. Most of the patients responded symptomatically to treatment.

Results: Homeopathic remedies eradicated the primary pathogen in 69.33% of the patients at the day 12 of treatment. 3 patients relapsed 8 to 9 days post-treatment. Bacterial reinfection occurred 10 to 11 days post-treatment in 5 patients. Adverse reactions observed among the 35 patients were rare. Nausea (7.69%) and mild elevation of hepatic enzymes (3.91%) was probably drug related. Nausea disappeared when the therapy ended. Elevated hepatic enzymes resumed at the 3-week follow-up. 3 patients demonstrated slight increases in serum creatinine on day 12 of treatment. 3 patients had a 13.52% elevation over baseline and the other had a 15.24% elevation. Serum creatinine values had improved in these 4 patients at 5-week follow-up.

Conclusion: Homeopathic remedies were effective and safe in the treatment of UTDs with renal failure.
IN-CAM RESEARCH SYMPOSIUM ABSTRACTS

IN-CAM RESEARCH SYMPOSIUM – ORAL PRESENTATIONS:

Building a database of validated pediatric outcomes: An investigation of compliance with established reporting standards

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Background: Many pediatric trials are published annually, but criticism exists regarding outcome measures used and their reporting. Reporting standards set out by the Consolidated Standards of Reporting Trials (CONSORT) group require accurately defined outcomes, and applies equally to studies of conventional or complementary and alternative medicine (CAM).

Objective: To conduct a systematic review to identify gaps in outcome reporting in pediatric randomized controlled trials (RCTs).

Methods: Ten high impact journals were searched for pediatric RCTs published between 2000 and 2010. Two independent reviewers conducted screening and data extraction on a random 20% subset of studies.

Results: Searches identified 2229 unique references. Of the 446 articles screened, 66% were included. Participant age ranged from 20 weeks gestation to 20 years. Most (65%) were of treatment rather than prevention. Commonly used controls included placebo (35%) and another intervention (33%). With respect to primary outcome reporting, 34% of trials did not identify a primary outcome. Half (53%) reported at least one primary outcome; of these, 55% described one outcome as primary and 38% identified more than one outcome as primary. One quarter of the trials that included only one primary outcome used a questionnaire or scale-based tool and of these, only 26% of these presented information on tool clinometrics.

Conclusions: This project will help identify gaps in the quality of outcome reporting in pediatric trials published in top journals over the past 10 years, leading to recommendations for improvements in reporting standards.
Utilization of a CAM information program at a provincial cancer agency

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Background: The Complementary Medicine Education and Outcomes (CAMEO) research program opened at the British Columbia Cancer Agency in April 2008 to address CAM information and decision support needs of patients, support persons, and health care providers (HCPs).

Objectives: Details of contact with CAMEO are logged into a database, capturing demographic information, contact reason(s), information/support requested, and the intervention provided. Database analysis will provide insight into CAM information and service needs during the cancer journey.

Methods: Both qualitative and quantitative data is collected during contact. Analysis uses descriptive statistics and content analysis.

Results: To date, the project has collected data for 1062 participants, comprising 53.8% patients (418 female, 153 male), 20.5% support persons, 21.6% HCPs, and 4.1% other/unknown. Preliminary analysis of CAMEO contact reasons indicates 36.7% were requests for CAM information support, regarding 277 different CAM therapies. Requests concern general CAM questions/exploring CAM options (46.3%), therapy safety (22.4%), therapy efficacy (19.5%), accessing reliable information (6.8%), CAM provider information (2.9%), and resolving practitioner-cancer agency information conflicts (2.5%). Objectives related to the CAM information needs include cancer control, cancer prevention, symptoms/side effects management, health and well being, recovery after treatment, and managing safety. Other contact reasons include signing up for courses about CAM (56.8%), information about CAMEO (8.0%), and collaboration requests (2.3%).

Conclusions: With so many CAM therapies available, this analysis provides unique and valuable insight into CAM use/information needs during the cancer journey. There is evident need for reliable CAM information and education to be available at the cancer agency.
Freedom of speech and health claims

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Health claims for food, supplements and natural health products assert a relationship between a substance and a disease. In the interest of curtailing false advertising and consumer fraud, regulatory agencies in most industrialized nations have attempted to limit the claims that promoters of such products may make on labels and in advertising material. These include for example, premarket approval of label statements (Canada), the statement that the “product is not intended to treat or prevent any disease” appear on certain NHP labels (USA) or suppression of all claims except that those that make up a “Positive List” of approved claims (EC). In the USA, promoters, as well as grass roots consumer organizations in many countries have strongly revolted against such regulations, in some cases winning important legal judgments against the regulatory agencies. Such judgments have enjoined agencies to authorize health claims based on supportive, but inconclusive evidence. In Canada and the EC, where all label claims require prior approval, there is growing support to invalidate premarket authorization for label claims, on the basis that it violates constitutionally protected rights of freedom of speech. This presentation outlines the US, Canadian and EC positions on health claims and supporting evidence, as well as the state of affairs for legal challenges to prevailing regulations. The pros and cons of a less restrictive labeling regime for NHPs that is line with freedom of speech doctrine are examined as are implications for Canadian regulatory policy and consumer welfare.
Today I understand it better”: Evaluating breast cancer patients’ success in learning lymphatic self-massage at the Princess Margaret Cancer Centre Lymphedema Clinic

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**Background:** Cancer-related lymphedema is a chronic progressive condition. The Princess Margaret Cancer Centre lymphedema clinic was established in 2005 to bridge patient-identified gaps in breast cancer-related lymphedema management and care. This clinic provides patients with comprehensive care plans and training in self-management and self-care skills based on Combined Decongestive Therapy (CDT) principles and International Lymphedema Framework guidelines. Manual lymphatic drainage (MLD) is a component of CDT. Patients are taught lymphatic self-massage (LSM) by a CDT-trained therapist using techniques adapted from MLD.

**Objectives and Methods:** This mixed methods study evaluates the clinic’s lymphatic one-on-one self-massage instruction intervention and its effect on patients’ knowledge and adherence to regular self-massage practice. Pre- and post-knowledge tests, structured demographic and self-massage questionnaires and semi-structured patient-feedback interviews were developed, administered and analyzed using basic descriptive statistics and descriptive thematic analysis.

**Results:** Pre/post knowledge test (n=25) results indicate that self-massage understanding improved (p=0.0001). Interviewed patients (n=18) reflected on their experiences with learning environment and made recommendations for program improvement. Motivators to LSM adherence included health literacy; barriers included physical limitations. Quantitative data (n=80) indicated higher adherence to regular LSM among patients who see a community CDT-therapist (P=0.024) and lack of time was the most commonly reported barrier (28%).

**Conclusion:** Data provided a more comprehensive understanding of patients’ needs and experiences of LSM instruction and adherence. In response, RMTs should be educated about cancer-related lymphedema, its treatment and massage-related contraindications to provide patients and those at risk of lymphedema with safe and effective massage and to support them in the maintenance of self-management skills.
Belief and the regulatory evaluation of homeopathic medicines in Canada

J. Cuffe

Background: In Canada, regulatory scientists in the federal government assess the quality, safety and efficacy of homeopathic medicines. Objectives: This paper describes how federal regulatory scientists engaged with the routine evaluation of homeopathic medicines for efficacy, and contrasts this with regulators’ reported private beliefs about the efficacy of homeopathic medicines.

Methods: The methods of social anthropology were used to investigate regulatory scientists’ everyday work in the premarket evaluation of natural health products in 2006-2007.

Results: In interviews, regulatory scientists who were also homeopaths professed a deeply-held conviction of the efficacy of homeopathy. Nevertheless, the commodities they assessed as regulators were not necessarily consistent with their own homeopathic practice. Scientists who were not homeopaths expressed a range of opinions regarding the efficacy of homeopathy and its medicines. Despite the range of private opinion, overt disbelief about homeopathy was rarely expressed in the workplace; several regulators – whether homeopath or not, with a range of convictions – independently deemed a colleague’s explicit statement of disbelief as inappropriate: as evidence of bias, or, at least a serious faux pas.

Conclusion: An entire science-based bureaucracy operated smoothly and consistently despite its individual regulators reporting a range of personal convictions regarding whether any particular homeopathic medicine, or homeopathy in general, ‘worked.’ I argue this was possible because the regulatory scientists proceeded with routine assessments according to textual standards and therefore – whether they were homeopaths or not – were required to reason within a “paradigm” of homeopathy, in a way that made ‘belief’ irrelevant.
Adjunctive cancer care at the Canadian College of Naturopathic Medicine: A prospective, longitudinal, observational cohort study

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Background: The Adjunctive Cancer Care (ACC) shift at the teaching clinic of the Canadian College of Naturopathic Medicine (CCNM) provides naturopathic care to patients with cancer.

Objectives: This prospective, longitudinal, observational study summarizes demographic, treatment, and outcome data from patients seen over a 13-month period.

Methods: Patients seen on the ACC shift between December 2009 and December 2010 were identified. A comprehensive review was performed on included patient files. The Measure Yourself Medical Outcome Profile (MYMOP), European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC-QLQ-C30), Karnofsky Performance Scale (KPS), and Measure Yourself Concerns and Wellbeing (MYCAW) tools were used to assess changes in function and quality of life (QOL). Prescribed treatments were also recorded.

Results: Of 189 reviewed charts, 138 fit inclusion criteria. Breast and prostate cancer were the most common diagnoses (22.5% and 14.5% of sample respectively). Three-quarters (74.6%) of patients received conventional interventions prior to treatment on the ACC shift while 51.5% received concurrent naturopathic care. Most (98.5%) patients with at least one consultation visit were prescribed oral supplements. 51.4% of all patients received at least one high-dose (50g-75g) intravenous vitamin C treatment. Marginal positive trends were observed in all measures of function and QOL.

Conclusions: Observational review of naturopathic care provided by ACC interns suggests positive impact. Adjunctive supplemental therapy is common. Several natural interventions are used with high frequency. Results from the present study show promise for outcomes relevant to people with cancer. Further controlled clinical research is needed to determine effectiveness.
Professional status imbalances within an Interprofessional context: A view of Massage Therapy

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**Background:** Massage therapy is one of the fastest growing complementary and alternative medicine (CAM) modalities in North America. Massage Therapists are currently regulated under the Regulated Health Professions Act in Ontario – the same Act governing physicians, nurses and physiotherapists. However, massage therapists continue to have lower professional status when compared to many of these other groups. This can compromise the nature of their interprofessional relationships, impede professional growth for massage therapy and undermine benefit for patients/clients.

**Objectives:** Specifically, its main objectives were to explore: (1) health professionals’ views of perceived barriers to increased professionalization, status and interprofessional collaboration in relation to massage therapy.

**Methods:** An exploratory case study approach (Yin, 2003) based on in-depth interviews with a range of health care professionals working in a hospital setting was employed. Data was analyzed using inductive thematic coding to generate key themes.

**Results:** A number of main themes emerged from the data analysis: problematization of the term “massage”; lack of knowledge about massage therapy in regard to scope of practice education and regulation; exclusion; and hierarchy among health care professionals.

**Conclusion:** Further analysis using theoretical perspectives such as professionalization (Freidson, 1970) and negotiated order theory (Strauss, 1978) can help illuminate the findings. Over time, it is anticipated that this study will contribute to our understanding of how the professional status of massage therapists affects the nature of their collaborative work.
Soy and breast cancer: A systematic review

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Background: Soy is a popular treatment for menopausal symptoms, however controversy exists around its safety for use in breast cancer, due to its purported estrogenic activity. Objectives We conducted a systematic review of soy for its effect on menopausal symptoms in women with breast cancer, and its impact on breast cancer incidence or recurrence.

Methods: We searched MEDLINE, Embase, the Cochrane Library, and AMED from inception to April 2011 for human interventional or observational data pertaining to soy and breast cancer.

Results: Of 2466 records, we included a total of 107 articles: 33 RCTs, nine uncontrolled trials, and 65 observational studies. Five RCTs reported on the efficacy of black cohosh for hot flashes; these studies showed significant reductions in hot flashes and menopausal symptoms scores with soy compared to baseline, but not compared to placebo. Soy intake consistent with a traditional Japanese diet (≤3 servings/d or ~25-50mg isoflavones) may protect against breast cancer and recurrence. Human trials show that soy does not impact circulating estrogen, or exert estrogen-like effects in estrogen-sensitive target tissues. Existing observational data among women who are taking tamoxifen show no increased risk of recurrence associated with soy, with some suggestion of benefit.

Conclusion: Soy consumption is associated with reduced risk of primary breast cancer, and may be associated with lower risk of recurrence. While there is no clear evidence of harm, caution is warranted regarding use of high dose (≥100mg) isoflavones by breast cancer survivors or women on tamoxifen.
Assessing interactions between herbal medicines and drugs: Updated review

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Background: Natural health products (NHPs) are commonly used, both alone and in conjunction with prescription drugs. This concurrent use is of concern due to the potential for harmful interactions. A tool to increase awareness of potential interactions between commonly used NHPs and pharmaceuticals was released in 2009. Given the rapid pace of research it is likely that new interactions have since been published.

Objective: To review the recent primary and secondary literature for information to update the 2009 tool.

Methods: Four databases were searched for studies pertaining to NHP-drug interactions. As a cross check tool to verify that no interaction was overlooked, “Herb, nutrient, and drug interactions: clinical implications and therapeutic strategies.” (Stargrove et al, 2008) was also reviewed. Potentially relevant studies were identified by one reviewer and if an interaction was found, the interaction was verified by a second reviewer.

Results: To date, 1997 studies have been identified from the database search (1910), textbook and NMCD (87) and screened for interactions. Examination of these studies for interactions is ongoing.

Conclusions: This update is intended to increase the knowledge about NHP-drug interactions as well as to fill in any gaps that may have been overlooked in construction of the original tool. The NHP-drug interaction tool is intended to act as a quick guide for users of NHPs and pharmaceuticals in order to avoid adverse reactions. Future steps in this project will include further updates to the tool, as well as creating specific grids for different clinical specialties.
Sources of practice knowledge among Saskatchewan massage therapists

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Background: Massage therapy (MT) has a long history of education and training derived largely from traditional knowledge and expert opinion and more recently from research. To promote evidence-based massage therapy it is important to examine practitioners’ sources of practice knowledge and to understand the processes of knowledge transfer.

Objectives: To identify massage therapists self-reported sources of practice knowledge and use of research-based resources, and to explore processes and factors associated with research-based clinical practice.

Methods: As part of a mixed-methods study, members of the Massage Therapist Association of Saskatchewan (MTAS) were surveyed using a mail out questionnaire about their sources of knowledge and use of common research resources. In addition, interviews were conducted with six participants to further explore knowledge utilization and transfer.

Results: The survey sample included 333 respondents representing a 41% response rate. Analysis was conducted using SPSS. The top three sources of knowledge were information learned about each client, clinical experience, and information from massage school. Evidence-based textbooks were the most utilized research-based resource and Cochrane Reviews the least. Interview participants shared inconsistent views about the extent to which their practice knowledge is research-based. For some, authority and opinion-based information were considered as research-based while others were critical of a perceived lack of evidence-based resources. Further analysis shed light on factors related to evidenced-based practice.

Conclusions: Saskatchewan MTs utilize a variety of sources of practice knowledge with an emphasis on evidence from client care, massage school curriculum, and textbooks. Critical thinking skills and research-based education are needed.
Addressing provider shortage in underserviced areas: The role of traditional, complementary and alternative medicine (TCAM) providers in Canadian rural healthcare

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Introduction: This study examined the role of traditional, complementary and alternative medicine (TCAM) providers in rural/remote communities of Ontario that provide care to underserved areas and may collaborate with biomedicine (BM) providers to provide “integrative” medicine (IM).

Research Questions: 1) to what extent are TCAM providers delivering care in rural/remote communities of Ontario? 2) How might TCAM providers be interacting with Biomedical (BM) providers? 3) In what specific ways may TCAM providers be contributing to human resources for health (HRH)?

Methodology: Using Purposive sampling, we conducted 29 in-depth interviews from four TCAM provider groups within multiple rural localities in Ontario: naturopathic doctors, doctors of chiropractic, registered midwives and traditional First Nations healers. A minimum of five interviews per provider-group was initially conducted. Interviews were analyzed using qualitative content analysis.

Results: TCAM providers are essential to rural healthcare in Canada as they are accessible and without common wait time issues as with BM providers. TCAM providers fill healthcare gaps by providing holistic care related to cultural/philosophical and spiritual congruency, ‘health promotion/education’ and lifestyle counseling. TCAM providers provide primary healthcare as well as bridged care and interim care. Though they strive towards interprofessional collaboration (IPC) and integrative medicine (IM), few TCAM providers accomplish this due to perceived and/or real barriers with interprofessional education (IPE).

Conclusion: TCAM providers currently provide care to warrant an HRH role in Canada. There is a need for more research into IPE, IPC and IM between these TCAM professions and the BM community in order for their role to become embedded in future health policy.
Access-geared herbal clinics in North America: Models and themes

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**Background:** The cost of herbal medicine care in North America currently rests largely on the individual consumer. One minor exception is herbal medicine care offered within *access-geared clinics*: health care settings structured to facilitate accessibility to services by minimizing economic barriers. Scant formal literature exists to evaluate such clinical models.

**Objectives:** 1. To identify and describe existing models of access-geared herbal clinics in North America, and 2) To investigate successes and challenges faced within these clinical models.

**Methods:** A broad literature review (including review of the herbalist community’s grey literature) was undertaken to gain an overview of the issues at hand. This was followed by three semi-structured interviews with professional herbalists working within student training clinic models.

**Results:** Five basic access-geared clinical models emerged, each with a distinct organizational and economic structure: the free clinic, sliding scale clinic, student training clinic, cannabis-funded clinic, and worker co-operative. Primary emergent themes across both the literature review and interviews, including: the value of distinct localized models of access-geared clinics based on a community’s resources and needs; the challenge of Western herbalism’s relative socio-political marginality; and the need for innovative fee structures, herb dispensary models, and overall financial management strategies. Questions around cultural competency strategies in access-geared herbal clinics emerge as relevant for future research.

**Conclusion:** Overall this work represents a first formal exposition pertaining to the work of North American access-geared herbalism, and offers a preliminary framework for future research.
Extracts of green tea for weight loss in overweight or obese adults: A Cochrane systematic review.

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Background: Natural Health Products containing extracts of green tea are widely available in Canada and used to aid in weight loss. Although a number of randomized controlled trials (RCTs) evaluating the efficacy of green tea in weight loss have been published, evidence regarding the efficacy of green tea is conflicting.

Objective: To systematically review the efficacy and safety of green tea products for weight loss in overweight/obese adults.

Methods: Eleven databases were searched, with no limit of language of publication, to identify RCTs comparing green tea with control in overweight/obese adults. Three authors independently extracted data and assessed studies for quality and risk of bias, with conflicts resolved by discussion. Heterogeneity of studies was assessed, data was summarized statistically and subgroup and sensitivity analyses were conducted. Adverse effects were recorded.

Results: Fifteen RCTs met inclusion criteria. Meta-analysis of the 14 studies with the lowest risk of bias showed a difference in mean weight loss of -0.95 kg [-1.75, -0.15] for green tea compared to control. Meta-analysis of 12 weight loss studies produced a difference in reduction in Body Mass Index of -0.47 kg/m² [-0.77, -0.17] in favor of green tea. Mild to moderate adverse effects, reported in 4 studies in both intervention and control groups included constipation, nausea, elevated liver enzymes, hypertension, dyspepsia and ulcerative colitis.

Conclusions: Although green tea extracts produced a modest, statistically significant weight loss in overweight/obese adults, it is unlikely to be clinically significant. Adverse effects were mild to moderate.
Provision of massage therapy services in Canadian urban hospitals - Phase 1 of a mixed methods study

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**Background:** As the effectiveness of massage therapy (MT) continues to be recognized and its professional status develops, MT is being incorporated into various health care settings. One setting where MT delivery is present yet unexplored is in Canadian urban hospitals.

**Objectives:** This study is the first phase of a larger mixed methods study on MT in Canadian hospitals. The objective of this phase was to describe whether and how MT is incorporated into the structure and patient care processes of Canadian urban hospitals.

**Methods:** A descriptive survey design was used. All hospitals (n=330) in 33 Canadian urban centers were systematically contacted to identify those which offer MT services. The Hospital-Based Massage Therapy Questionnaire was administered to all hospitals that were identified to provide MT to patients. Questionnaires were administered by telephone with an individual internally identified as most appropriate to respond to the questionnaire items. Descriptive statistics will be used in the analyses.

**Results:** MT services are currently provided in 59 Canadian urban hospitals (based on a response rate of 83%). Of these, 15 provide MT services to patients. Results will be presented on: the types of hospitals that provided MT, reasons for MT provision, organization of MT services, funding of MT services, employment structures, and incorporation into patient care.

**Conclusions:** MT services are starting to be incorporated into different types of Canadian urban hospital settings in various ways. There is significant potential for the integration of MT into Canadian hospital settings that needs to be research-informed for effective implementation.
Patients' Perspectives on Integrative Medicine Care

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**Background:** Patients have been integrating complementary and alternative medicine (CAM) into their conventional medical care regimes for several decades. Today, IM centres are springing up in hospitals and in the community. Systematic research on this development has been sparse.

**Objectives:** We ask: (1) Why patients choose IM centres?, (2) How they find their way to them?, and (3) How they experience their health care there?

**Methods:** We use an updated and amended version of the Behavioral Model of Health Services Use (Andersen 2008) which highlights predisposing, enabling, and need factors. The data come from semi-structured interviews with 40 randomly chosen patients who attended two integrative health care centers (20 each) in a large urban area in Canada. We used qualitative comparative analysis to identify recurring themes.

**Results:** Patients with higher education and incomes and careers in the professions, business, and the arts are predisposed to use IM care. Social networks enabled patients to access IM care. Need focused on relief from chronic problems and help with preventive measures. Almost all the patients expressed satisfaction with the care they were receiving and emphasized the importance of interpersonal relationships with the practitioners.

**Conclusion:** Patients welcomed the opportunity to choose among modalities concentrated in one place. They recognized the value of the team approach and having a voice in their own care. While only a minority of the patients were actually receiving care from more than one practitioner, they all believed they were getting superior care because they were in an integrative environment.
Prevalence and characteristic of herbal and homeopathic medicine use in pregnancy: results from an international study.

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Background: The use of complementary and alternative medicine (CAM) has grown considerably. Surveys conducted on the use of CAM products in pregnancy demonstrate a wide range in the prevalence, from 4% to 62%. The belief that these therapies provided safe alternatives to medications and a desire to have control in their pregnancy experience are some reported factors that motivate women to use these therapies.

Objectives: Characterize the prevalence, socio-demographic and lifestyle characteristics of women who use CAM products in pregnancy and gain insight into the reasons for use and information sources for CAM products.

Methods: This was an international web based survey; open to both pregnant women and new mothers in Australia, Europe, North and South America and Russia. Women were recruited via the strategic placement of survey notices from October 2011 to February 2012. The survey was presented as a series of Yes/No, multiple-choice and open-ended questions; asking about health disorders and the medication(s) or CAM products used, reasons for use and information sources.

Results: Over 9,000 women in nineteen different countries responded. Summarized results will be presented regarding the prevalence, socio-demographic and lifestyle characteristics of women who use CAM products during pregnancy by country. We will also report on the five top herbal remedies used, in which trimester(s) and reasons for use by country. The analysis will include information regarding women with chronic disease and their use of CAM products

Conclusions: These results will provide insight regarding the international use of herbal products and homeopathic remedies in pregnancy.
Effect of massage therapy on anterior abdominal wall hernia post-operative surgery site infection rates

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Background: Surgery to repair anterior abdominal wall hernias constitutes one of the most common surgical procedures. Surgical site infections (SSI) are the third most frequent hospital-acquired-infections, resulting in increased post-operative costs. The potential benefit of massage therapy (MT) in preventing post-operative infections in hernia patients has not been reported in the research literature to date.

Objective: To determine if the number of reported SSIs is lower in patients who received one 30 minutes localized MT treatment and those who did not, in a private hernia hospital in Toronto Canada.

Method: A retrospective analysis was conducted on a dataset of patients who received a hernia operation between January 2010 and December 2011. All patients received standard post-operative care and were able to self-select to receive one 30-minute post-operative MT treatment.

Results: 14,580 patients received a hernia operation at this private hernia hospital between 2010 and 2011. Of these, 1950 (13.37 %) received one post-operative MT treatment. During this time, 74 SSIs were reported. The rate of reported SSIs was 0.21% in the MT group and 0.59% in the non-MT group. The occurrence of post-operative infection was significantly lower in the MT group compared to the non-MT group (Fisher’s Exact, p=0.02).

Conclusion: Although the overall occurrence of SSIs is low for patients who undergo surgery for hernia at this private hernia hospital, MT may be an important component of post-operative care for hernia patients to prevent the occurrence of localized wound infections. Further investigation is warranted.
Natural health product interaction reporting with concurrent benzodiazepine use: A Systematic review

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Background: Benzodiazepines promote calming due to their potentiating effect on the inhibitory neurotransmitter GABA, and are widely prescribed to treat a variety of conditions, most notably anxiety and insomnia. Some natural health products (NHPs) can also influence neurotransmitters, including GABA, leading to a potential NHP-drug interaction.

Objective: To investigate interactions between benzodiazepines and natural health products.

Methods: The following databases were searched from their inception for terms related to benzodiazepines, NHPs, adverse events or interactions: Medline, EMBASE, and Cochrane Central Registry of Controlled Trials. Selection criteria included published English language studies, of any design, and in all populations. Studies that reported an interaction between a benzodiazepine and NHP were included. Data about the interaction (including possible CYP interactions), drug, NHP, and study population were systematically extracted.

Results: Forty-eight articles met inclusion criteria. Of the included studies, 11 involved human populations (2 randomized controlled trials, 7 controlled trials and 2 case reports) and 34 articles were controlled trials using animals or in vitro experiments.

Conclusions: Theoretical data suggest multiple potential interactions between NHPs and benzodiazepines. Further clinical data are urgently needed to determine if such interactions are clinically relevant, and to guide patients and health care provider regarding concurrent use.
Acupuncture for amblyopia in children

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Background: Amblyopia, unilateral (or occasionally bilateral) visual deficit, could not be attributed to any demonstrable abnormality of the visual pathway, but could be reversible with appropriate treatment within the sensitive period for visual maturation. To recover its potential best vision in the amblyopic eye is the purpose of treatment. There are several treatments for amblyopia, including occlusion, refractive correction, acupuncture, et al. Although acupuncture is reported to be beneficial to amblyopic children, its effect is still unknown. This review was designed to examine the treatment effect from acupuncture.


Methods: (1) We searched the Cochrane Central Register of Controlled Trials (CENTRAL), The Cochrane Library, MEDLINE, EMBASE, the metaRegister of Controlled Trials (mRCT), ClinicalTrials.gov, the Chinese Biological Medicine Database (CBMdisc), China National Knowledge Infrastructure (CNKI), the Chinese scientific periodical database of ViPu (ViPu) and WanFang database. There were no language or date restrictions. The searches were last run on 20 Feb 2012. (2) We included randomised controlled trials (RCTs) for the treatment of amblyopia within participants ≤ 12 years old. (3) Two authors working independently assessed, extracted and entered data into Review Manager 5, and then double checked for any errors. Any discrepancy was resolved by discussion or the third author's arbitration.

Results: Four trials were eligible for inclusion. These studies applied the improvement of best-corrected vision acuity (BCVA) in the amblyopic eye as primary outcome. Three of them (Lam 2011; Li 2009; Zhao 2010) including 268 participants, calculating responders of the improvement of BCVA, were incorporated into a meta-analysis, and showed that the effect of acupuncture combined with conventional therapy is superior to that of conventional therapy alone with RR 1.28, 95%CI (1.11, 1.46) and P value 0.0006. Two trials (Lam 2011; Zhao 2010) including 164 participants were conducted a meta-analysis and indicated that the mean change of BCVA in the intervention group is much better than that in the comparison group with MD 0.56, 95% CI (0.23, 0.89) and P value 0.009.
Conclusions: Acupuncture therapy combined with conventional treatments is superior to conventional treatments alone for the treatment of strabismic, anisometropic and ametric ambyopia; acupuncture could potentially be an adjunctive treatment for ambyopic children.
From CAM use to pathways of treatment and care

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Background: CAM use is usually assessed by means of surveys; how it is combined with conventional treatment use and how it develops over time is less commonly addressed.

Purpose: To describe and understand cancer treatment and care as pathways that individuals develop over time, as well as the factors impacting on these pathways.

Methods: A cohort of individuals with a diagnosis of breast or prostate cancer was followed for one year. Qualitative interview data were used to assess types of pathways participants developed.

Results: Thirty-five participants were recruited in Canada and the US. Qualitative analysis of data resulted in five typologies of pathways. 1. Aggressive Conservative: Aggressive conventional treatment with intention of eradicating the cancer and preventing recurrence. 2. Reasoned Conventional: Minimal interest in CAM and thorough assessment of conventional treatment options. 3. Reasoned Integrative: Belief in conventional and CAM treatment benefits, and focus on both curing and healing. 4. Reasoned Alternative: Major post-diagnosis lifestyle changes and extensive research resulting in natural therapy use. 5. Crossover: Shifting between paths as a result of disease progression, treatment side effects, and/or outcome self-monitoring. Factors influencing pathways include illness characteristics, motivation for treatment, treatment cost, philosophy of healing, relationship with healthcare providers, and satisfaction with treatment outcomes.

Conclusion: Treatment decision-making is an ongoing, complex process impacted by many variables. This research addresses complexity and holism which are increasingly important in behavioral research. While this identification of care pathways moves beyond use of and changes in CAM therapies, more researchers need to examine this.
Study Of Natural Health Product Adverse Reactions (SONAR): Active surveillance in community pharmacies

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Purpose: To investigate the adverse event rates associated with natural health product (NHP) use, prescription drug use and concurrent NHPs-drug use through active surveillance in community pharmacies.

Methods: Participating pharmacists and pharmacy technicians screened consecutive individuals picking up prescription medications about (i) NHP use, (ii) prescription medication use and (iii) concurrent NHP/prescription medication use in the previous one month and (iv) the presence of potential adverse events. If a potential adverse event was identified and the patient provided written consent, a research pharmacist conducted a guided telephone interview to gather additional, detailed information on the adverse event and medical history of the patient after obtaining additional verbal consent.
Results: Over a total of 105 pharmacy weeks, 1122 patients were screened, of which 417 reported taking prescription drugs only (37.2%; 95% CI: 34.3%-40%), 52 reported taking NHPs only (4.6%; 95% CI: 3.4%-5.9%) and 653 reported taking NHPs and prescription medication concurrently (58.2%; 95% CI: 55.3% to 61.1%). A total of 57 patients reported a possible AE, which represents 1.4% (95% CI: 0.3% to 2.6%) of those taking prescription medications only, 11.5% of those taking NHPs only (95% CI: 2.9% to 20.2%) and 6.9% of those taking NHPs and prescription medications concurrently (95% CI: 4.9% to 8.8%).

Conclusion: Compared to passive surveillance, this study found active surveillance to markedly improve NHP adverse event reporting rates. Active surveillance offers improved quantity and quality of adverse event data, allowing for meaningful adjudication to assess potential harms.
Neuromechanical effect of spinal manipulation and its relation to clinical outcomes: A control group study

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Background: Non-specific low back pain (LBP) is one of the most frequent health conditions, with a lifetime prevalence of 60%-90%. Although spinal manipulation is a recommended therapeutic approach for chronic and acute LBP, the biological mechanisms underlying the effects of spinal manipulation are not fully understood, and even if scientific evidences demonstrate that spinal manipulation evokes specific neurophysiological responses the clinical relevance of these physiological changes has never been studied.

Objectives: The main objectives of the current project were to quantify the neuromechanical effect of spinal manipulation and identify subgroups of LBP patients who are good responders to spinal manipulation.

Methods: Sixty subjects with chronic LBP were recruited and randomly assigned to either an experimental or control group. Participants were instructed to perform 5 cycles of trunk flexion-extension. The experimental group received a lumbar spinal manipulation, while subjects of the control group did not. Immediately after, 5 minutes after, and 30 minutes after the spinal manipulation (or control position), subjects repeated the five-trial flexion-extension task. Before the experimentation LBP related clinical outcomes were assessed using questionnaires.

Results and conclusions: Among the main results, no group differences were observed in immediate response to treatment. However, a significant group difference was observed 30 minutes following the spinal manipulation (or control condition). A moderate significant correlation was observed between disability and EMG activity during trunk flexion and trunk full flexion indicating that disability may be an important factor to consider in the identification of non-specific LBP subgroups.
The nature of therapeutic massage bodywork practice creates a significant research-practice gap
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Introduction: While the research-practice gap has been examined in several health care professions, the relevance to therapeutic massage bodywork (TMB) practitioners, and the implications for research in TMB, have not been explored. Methods: Nineteen practitioners were interviewed using semi-structured interviews as part of a combined-methods project examining the relationship between TMB training and clinical TMB practice, and the consequent implications for TMB research. Concepts pertaining to the research-practice gap were examined during the qualitative description analysis. Results: Practitioners articulated two key issues. One is the belief that research processes rarely allow for normal clinical process involving individualizing treatment to each patient’s needs as assessed at the treatment outset and moment-by-moment throughout. The second issue arises because practitioners perceive the research process and clinical practice to be divergent (e.g., patients rarely present in clinic the same way as in research projects, differing treatment process). Thus practitioners question the value of research for clinical practice). Discussion: Most research courses and much TMB research emphasize the “gold standard” of randomized, controlled clinical trials, and use research designs better suited for products than for health care services which involve continual in-the-moment treatment decisions. Even with research literacy skills, the translation of research results to clinical practice remains problematic because of the procedural differences between clinical trials and clinical practice. In their publications, researchers rarely bridge the differences between their research process and results, and clinical treatment. Interviewed practitioners were not familiar with modern, practice-based research designs, which are still limited in the literature.
Atitudes towards Complementary and Alternative Medicine (CAM) among McMaster University medical students: A cross-sectional survey

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Background: Canadian medical schools are increasingly incorporating material on CAM into their curriculum, but little is known regarding students’ attitudes. Medical students at McMaster University are provided CAM education in a sub-unit of their family medicine clerkship rotation. This includes a lecture, readings, and a half-day observership with 1 of 5 CAM provider types (chiropractic, osteopathy, naturopathy and traditional Chinese medicine and energy medicine) followed by a small group tutorial.

Objective: To assess student attitudes towards CAM and the family medicine CAM sub-unit.

Methods: In February 2012, we administered a 21-item cross-sectional survey to 613 McMaster medical students that enquired about demographic and CAM sub-unit preference variables as well as general knowledge and attitudes towards CAM exposures during their training. The primary outcome was an aggregate score from 12 items that represented respondents' attitude towards CAM.

Results: 233 medical students provided completed surveys, for a response rate of 38%. Most students (62%) reported that they would prefer to receive CAM education earlier in their training (pre-clerkship). Few (8%) reported that CAM education should not be provided at all. Among the 64 respondents who provided written comments, many noted that CAM is challenging to consider as a whole since multiple professions are considered in this category. We anticipate that further results will be available at the time of the symposium.

Conclusion: The majority of McMaster medical students consider CAM education an important aspect of their training.
Research priorities for community-based Integrative Oncology in Canada: Results of a delphi survey and consensus meeting

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Objectives: To develop consensus-based research priorities and a research agenda for community-based integrative oncology in Canada.

Methods: We invited cancer researchers, practitioners, knowledge users and patients to participate in a 3-round Delphi survey, followed by a 2-day in-person meeting to discuss the Delphi results, reach consensus on research priorities and develop an action plan to implement a Canadian research agenda.

Results: Eighty-one participants took part in Round 1 of the Delphi survey, 52 in Round 2 (66.2%) and 45 (86.5%) in Round 3. Nineteen invited stakeholders participated in the 2-day meeting held in Ottawa, Canada. Five priority research areas emerged as a foundation for a Canadian research agenda: Clinical Effectiveness; Safety; Resource and Health Services Utilization; Knowledge Translation; and Developing Integrative Oncology Models. Meeting participants agreed that the five areas are inter-related and an order to approach their study should not be imposed. Research is needed within each priority area from a range of different perspectives (e.g., patient, practitioner, health system) and that reflects a continuum of integration from the addition of a single complementary intervention within conventional cancer care to systemic change. Participants brainstormed strategic directions to implement the developing research agenda and identified related opportunities within Canada. A voting process helped to identify working groups to pursue strategic directions within the interest and expertise of meeting participants.
**Conclusions:** The identified research priorities reflect the needs and perspectives of a spectrum of integrative oncology stakeholders. Ongoing stakeholder consultation is needed to ensure appropriate knowledge translation, perhaps through a national network.
Looking beyond the barriers: Practical and symbolic factors associated with disclosure of Complementary and Alternative Medicine (CAM) use

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Background: Research on disclosure of CAM use to physicians has tended to focus on barriers to disclosure rather than factors that promote disclosure. Although sociodemographic and physician factors have been identified as disclosure barriers, less attention has been given to practical reasons for disclosure or to the meaning attached to disclosing CAM use.

Objectives: The purpose of this study was to examine the practical (positive CAM outcomes) and symbolic (sense of control, CAM provider support) factors associated with disclosure of provider-based CAM use in two general medical samples of CAM consumers.

Methods: Two samples of provider-based CAM consumers, undergraduates (N = 226, M age = 23.4 ± 6.6), and community-dwelling adults (N = 128, M age 32.1 ± 11.7) completed a survey about their CAM use and disclosure, health self-efficacy, CAM patient centered care, and CAM outcomes.

Results: Disclosure rates were 66% among students and 69% among the community adults. T-tests revealed that students who disclosed their CAM use reported significantly greater perceived control over health, provider patient-centered care, and positive behavioural CAM outcomes, whereas community adults who disclosed reported greater patient-centered care and positive cognitive CAM outcomes. Logistic regression analyses of the student data controlling for age, sex, and chronic illness revealed that those who disclosed CAM use were more likely to report higher perceived control over health, patient-centered care and positive behavioural CAM outcomes.

Conclusions: These findings suggest that CAM disclosure may be facilitated symbolically by perceived control and CAM provider support and practically by positive CAM outcomes.
Attitudinal changes of health science students participating in a CAM-enriched interdisciplinary course and CAM fair

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As many Canadians use complementary and alternative medicine (CAM), the importance of CAM education for health sciences students is increasingly recognized. However, finding time for additional content to already oversubscribed curriculum is a common barrier. At the University of Alberta, "IntD410 Interprofessional Health Team Development" is a mandatory 30 hour course for undergraduate learners in Dental Hygiene, Dietetics, Kinesiology, Medicine, Nursing, Pharmacy, Physical Therapy, and Occupational Therapy. The CAM-stream of IntD410 was developed in Fall 2011 with interprofessional faculty and included: (i) several didactic lectures; (ii) large group learning provided by various CAM providers (e.g. laughter yoga, mindfulness, Qi Gong); (iii) four problem-based cases to promote discovery-style small group learning; and (iv) the CAM Fair, where students could interact with Acupuncture, Massage Therapy, Mindfulness, Music Therapy, Naturopathy, Neurofeedback, Reiki, and Yoga practitioners. The CAM-stream was piloted in Winter 2012 to 71 students. Students’ shifts in attitudes towards CAM and interprofessional education were assessed qualitatively by reflective assignments and quantitatively using pre/post validated questionnaires. Initial reflections revealed that many students did not know what each other’s professions entailed and had misconceptions about CAM. Final reflections revealed they felt more comfortable evaluating CAM practices, and recognized the value in collaboration. Statistical analysis is underway and will be presented at the conference. Learning interprofessional team skills and CAM concurrently encourages students to evaluate therapeutic approaches outside their scope of practice and to collaborate. CAM education for health science students is essential for patient-centered care, and interprofessional education is an effective vehicle for this.
Towards integrative cancer care: A participatory, formative evaluation of practitioner integration at the Ottawa Integrative Cancer Centre

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**Objectives:** To describe elements of integrative practice in place at the Ottawa Integrative Cancer Centre (OICC), define a collective vision for integrative practice, and develop strategies to facilitate the provision of patient-centred, integrative care. The study builds on previous research exploring interprofessional team relationships in Canadian integrative healthcare settings.

**Methods:** A multi-phase, participatory formative evaluation is underway including: 1) Descriptive analysis of scheduling data; 2) Interviews with OICC practitioners to explore actual and ideal elements of integrative practice; 3) Focus groups with OICC practitioners to define a collective vision for integrative practice; 4) Comparison of actual practice to the defined collective vision; and 5) Developing strategies to change practice.

**Results:** A review of scheduling data from January-May 2012 is complete (Phase 1). In these five months, 218 people living with cancer consulted at least one OICC practitioner: 175 (80%) consulted one practitioner, 30 (14%) consulted two practitioners and 13 (6%) consulted three practitioners. The 43 patients who consulted more than one practitioner most commonly consulted two Naturopathic Doctors (NDs) (n=13; 30%), or an ND and a nutritionist (n=6; 14%), acupuncturist (n=3; 7%), physiotherapist (n=3; 7%) or counselor (n=3; 7%). Individual interviews with OICC practitioners, followed by focus groups, will take place throughout the summer of 2012. Results of all evaluation phases will be available for presentation during the IN-CAM Research Symposium.

**Conclusion:** Current referral patterns demonstrate a small amount of interprofessional care at the OICC. This formative evaluation will explore barriers to cross-referral and help to develop strategies to further facilitate integrative practice.
Crossing the great divide: An assessment of Ontario Homeopaths, Naturopaths and TCM/Acupuncturists prior to regulatory transition

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Objective: Homeopaths, TCM/acupuncturists and naturopaths in Ontario are in the final stages of transition to regulation under the Regulated Health Professions Act. Based on survey data of the population of each profession, our study compares the characteristics and attitudes of the three professions prior to regulation.

Methods: Data consists of surveys of the population of practicing homeopaths, naturopaths and TCM/acupuncturists in Ontario. The surveys were designed as a “census” of each profession to assess the pre-regulatory transition demographic, education, work practice and attitudes of each group. Two of the surveys (homeopath, naturopath) were on-line surveys and in English. The TCM/acupuncture profession survey (ongoing) is available in both English and Chinese and was sent both online (n=815) and mailed (n=743) depending on availability of contact information.

Results: Preliminary analysis of the homeopathic (response rate 52.4% ; 435/831) and naturopathic data (response rate 49.7% ;459/924) indicates the majority of survey respondents should qualify for registration. The homeopathic profession may face some challenges due to the high number of part-time practitioners compared to full-time. Both groups are strongly in favour of the regulatory transition, believing the benefits outweigh the costs. The TCM/acupuncturist data will be added to the analysis in late summer 2012.

Conclusion: Analysis of the survey data will provide insight into the preparedness of each professional group for the regulatory transition. The data highlight differences in terms of work practice that may present some challenges post-transition. Overall, support for regulatory change is high amongst existing members of the homeopathic and naturopathic professions.
Supporting Chinese-speaking cancer patients to make safe and informed decisions around Complementary Medicine

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Complementary medicine (CAM) is highly popular in the Chinese-speaking cancer population worldwide. In North America, the prevalence of CAM use was also found to be higher in Chinese-speaking cancer patient population comparing to their English speaking counterpart. Previous studies have found that Chinese-speaking cancer patients rarely speak to their health care providers (HCP) about their CAM use. Using CAM therapies without consulting a HCP can complicate their conventional cancer treatment as well as have potential risks of drug-herb interactions, leading to possible hospitalizations. This not only adds additional harm to the patients, but also adds more costs to our medical system. In order to help them make safe and informed decisions around CAM, the Complementary Education and Outcomes Program (CAMEO), a nurse-led research program, has been working to advocate for culturally appropriate CAM education and decision support services for this patient population. Creating such services require thorough knowledge of their decision-making process in order to find out what the unique needs are to this population. In this presentation, we will describe the details of their decision-making experience around CAM. In particular, we will discuss the reasons for their CAM use, the sources of their CAM information, the CAM therapy selection processes, and challenges they faced during the process. Clinical implications and future CAMEO plans on supporting these patients to make safe and informed decisions will also be shared.
Evaluating a CAM and cancer education program in a provincial cancer centre

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Background: Since 2009, the Complementary Medicine Education & Outcomes (CAMEO) Research Program at the British Columbia Cancer Agency has evaluated the impact of its complementary medicine (CAM) and cancer course for patients and support persons.

Objectives: The course addresses identified knowledge gaps about CAM use and informed decision-making during the cancer journey.

Methods: The course was offered twelve times, through four regional cancer centres. Participants completed surveys before and one month following the course. The survey incorporated both new and validated scales. Preliminary analysis includes descriptive statistics and paired t-tests comparing initial and follow-up questionnaire scores.

Results: Of the 227 patient participants, 138 (60.8%) returned follow-up questionnaires. No significant changes were found in CAM level of use or in types of CAM information sources accessed. However, access of reliable, on-line evidence-based information websites increased from 8.5% to 29.0% (t(97)=10.4, p<0.001). Patients who scored “moderately” or “very knowledgeable” on items assessing CAM knowledge, safety, risks and benefits, finding information, and assessing therapy usefulness, increased from 13.4% to 49.2% (t(99)=22.87, p<0.001). Patients’ confidence in decision making on the Decision Self-efficacy Scale (0 (no) to 100 (very confident)) increased from 52.8 to 70.6 points. Decisional conflict on the three-category Decisional Conflict Scale (0 (no conflict) to 100 (extremely high decisional conflict)) decreased from 55.8 to 26.6 points.

Conclusions: Preliminary patient findings indicate the CAM education course may not change CAM use, but can significantly impact understanding and knowledge about CAM use during the cancer journey and increase the use of up-to-date, evidence-informed information resources.
Ontario Traditional Chinese Medicine/Acupuncture practitioners: A survey

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Introduction: Traditional Chinese medicine/acupuncture practitioners are in the process of being granted self-regulatory status under the Regulated Health Professions Act in Ontario.

Objectives: The objectives of the project are to explore: 1) the current demographics, education and practice patterns of traditional Chinese medicine/acupuncture practitioners in Ontario; and 2) the attitudes of traditional Chinese medicine/acupuncture practitioners about the proposed new regulations.

Methods: A survey composed of questions related to demographic, education/training and practice characteristics, as well as attitudes towards the new regulations was e-mailed (n=815) and post mailed (n=743) in June 2012 to all individuals that self-identified as traditional Chinese medicine practitioners and/or acupuncturists practicing in Ontario. These individuals were identified from practitioner organizations that provided publically-accessible member lists, internet searches using Google and online indexes such as “yellow pages”, Chinese newspapers, as well as personal visits to Chinese business centres in the greater Toronto area.

Results: Data collection is still in progress and will be completed by August 2012.

Conclusions: This survey will enable us to describe current traditional Chinese medicine/acupuncture practitioners and their practices in Ontario. Additionally, the data will provide a baseline for exploring the impact of regulation on this group of practitioners in future studies.
Flax and breast cancer: A systematic review

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Background: Flax is a commonly consumed food and dietary supplement known for its phytoestrogenic effects. It is not known whether flax may be safe for use among women with breast cancer.

Objectives: We conducted a systematic review of flax for efficacy in improving menopausal symptoms in women living with breast cancer, and potential impact on risk for breast cancer incidence or recurrence.

Methods: We searched MEDLINE, Embase, the Cochrane Library, and AMED from inception to December 2011 for human interventional or observational data pertaining to flax and breast cancer.

Results: Of 1774 records, we included a total of seven articles: two RCTs, three reports of two uncontrolled trials, and two observational studies. Two RCTs found that flax consumption increased excretion of 2-hydroxyestrogen (p<0.005), and increase 2:16 hydroxyestrogen ratio (p<0.05), indicating possible chemopreventive effects, although one uncontrolled study reported opposite effects. Flax non-significant decreased circulating estradiol, estrone, and testosterone; and significantly decreased in Ki67 expression (p<0.001) and atypical cytology (p=0.035) in women at risk of breast cancer, suggestive of a decrease in risk. Observational data suggest an inverse association between flax and risk of primary breast cancer as well as risk of mortality among breast cancer patients.

Conclusions: Current evidence suggests that flax is not associated with increased risk of breast cancer. Flax has antiproliferative effects in the breast tissue of women at risk of breast cancer, and may protect against breast cancer, as well as risk of death among affected patients.
Vitamin D and breast cancer: A systematic review

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**Background:** Vitamin D has received much attention for its purported antitumor effects, and is increasingly used among patients with cancer, including breast cancer patients.

**Objectives:** We conducted a systematic review of vitamin D for effects in prevention of primary and secondary breast cancer, antitumor effects, and effects on cancer- or treatment-associated symptoms in breast cancer patients.

**Methods:** We searched MEDLINE, Embase, the Cochrane Library, and AMED from inception to March 2012 for human interventional or observational data pertaining to vitamin D and breast cancer.

**Results:** Of 2760 records, we included a total of 52 articles: four reports of three RCTs; four uncontrolled trials and one retrospective chart review; 20 reports of 19 cohort studies; 10 nested case control studies, and 13 reports of 11 case control studies. Two large RCTs suggest that supplementation may be associated with reduced risk of breast cancer. Three studies suggest that high dose vitamin D (HDD), up to 10,000IU daily or 50,000IU weekly, reduces musculoskeletal pain and/or disability secondary to bone metastasis or aromatase inhibitor therapy. None of the 7 trials reported significant adverse effects associated with HDD. Observational data is mixed, but approximately 50% of studies reviewed protective effects on risk of breast cancer, recurrence, or death.

**Conclusions:** Current evidence suggests a possible inverse association between vitamin D status and risk of breast cancer. High dose vitamin D3 supplementation appears to be safe in patients with breast cancer, especially given the prevalence of deficiency/insufficiency, and may reduce risk of arthralgia secondary to aromatase inhibitor therapy.
Integrative health care/medicine: A bibliometric analysis of an emerging concept

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Background: Complementary and alternative medicine (CAM) is increasingly being integrated into conventional health care settings. Integrative health care/medicine (IHC/M) has become a term used to identify these innovative practices.

Purpose: Evaluate the IHC/M literature in order to develop a better understanding of the development of the IHC concept and its application in relation to CAM. The objectives of this review are to identify: (1) the degree of scientific production of papers that defined and/or conceptualized IHC, and (2) overall development trends in this field.

Methods: All IHC articles published between 1915 and 2010 indexed in MEDLINE, EMBASE, AMED, CINAHL, and PSYCHInfo were retrieved. A title-abstract-full article review screening process was used to determine the final article sample. Bibliometric indicators, including impact factors (IF), year, country, research area, and keywords were used to create a cartography of research trends and to trace the production dynamics.

Findings: 4716 articles were retrieved. 268 met the inclusion criteria. 129 journals from a range of health disciplines published on IHC. IHC articles were published in low to moderate IF journals. Almost half (42%) of the research productivity occurred between 2005 and 2007. Corresponding authors represented 19 countries. Indexing keywords most frequently were specific to diseases, symptoms, healing concepts and terms derived from “integrate”.

Conclusion: This bibliometric analysis enables the evaluation of the research output and its impact in the health care field. It also provides important insights on how the IHC/M field has developed and to identify potential directions for future research in IHC.
The perceived role of massage therapists on patient care teams in Canadian urban hospitals – Phase 2 of a mixed methods study.

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Background: Massage therapists in hospitals are increasingly collaborating with other health care professionals to provide care to patients and/or clients. The ability to collaborate with others is considered a critical element of professional practice. A key component of collaboration is an understanding of professional roles, which has received very little attention within the MT field.

Objectives: This study is the second phase in a larger mixed methods study on MT in Canadian hospitals. The objective of this phase is to explore and describe how massage therapists who work in patient care teams in Canadian urban hospitals perceive their role.

Methods: In-depth semi-structured interviews were conducted with a purposive sample of MTs who are members of hospital patient care teams. All interviews were conducted by telephone, digitally recorded, and transcribed verbatim. Interview data will be analyzed using a constant comparison qualitative content analysis approach. A semi-structured framework, based on the Nursing Role Effectiveness Model, will be applied to initiate coding. It is anticipated that the themes will be further developed and new themes will be identified as information emerges during the analytic process.

Results: Analysis is currently in progress. Perceived MT roles on patient care teams will be presented and compared across different hospital settings.

Conclusions: Massage therapists may contribute an important supportive and human element to patient care in increasingly high-tech hospital settings.
Vitamin D: Pharmacokinetics and safety when used in conjunction with pharmaceutical drugs in the treatment of cancer: A systematic review

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Background: Vitamin D has anti-cancer and anti-inflammatory properties modulated through gene transcription and non-genomic signaling cascades. Vitamin D is used clinically, as a chemopreventative and a natural therapeutic agent for people living with cancer.

Objective: Summarize the available research on interactions between vitamin D and pharmaceutical drugs used in cancer treatment, as well as, the pharmacokinetics of vitamin D.

Methods: A search was conducted in MEDLINE®, Embase, and AMED from inception to April 11, 2012. The search employed both controlled subject headings (e.g., Vitamin D, Cholecalciferol, Cytochrome p-450 enzyme system) and text words (e.g., vitamin D3, Calcitrol, CYP). No restrictions were placed on language of publication or country of study. Studies were included if they reported on any form of vitamin D and pharmaceutical drugs used in the treatment of cancer patients.

Results: There were 26,353 records reviewed; 26 articles fit the inclusion criteria. Overall, there were no clinical interactions found between the drugs used in the treatment of cancer and 1,25(OH)D in cancer patients. Hypercalcemia was the most frequently reported side effect that occurred in conjunction with the reported pharmaceutical drugs. The half-life of 25(OH)D and/or 1,25(OH)D was found to be impacted by cimetidine, rosuvastatin, prednisone and possibly some chemotherapy drugs. Clinical interactions with vitamin D3 have not been studied.

Conclusion: No unusual adverse effects in cancer patients, beyond what is expected from high dose 1,25(OH)D supplementation were revealed through this review and while sufficient evidence is lacking, supplementation with 1,25(OH)D during chemotherapy appears to have a low risk of interaction.
Can quality in Professional Education and Training be characterised by three core categories? Findings from a qualitative, single case study of the education quality at a small private college in Switzerland

U. Kessler

Background: Public desire for CAM in Switzerland is highly evident with over two thirds of the population voting in a national referendum in May 2009 in favour of CAM being included in the Swiss constitution. CAM education in Switzerland is undertaken in the private sector with wide variation in pedagogical approaches and quality assurance procedures. However, the public interest in CAM necessitates an assurance of public safety and professionalism of service.

Objectives and Methods: This project utilised a qualitative, single case study approach to examine a college offering part time professional education and training for practitioners in CAM in Switzerland. Utilising Grounded Theory as a methodological framework for collecting and analysing the data, it sought to investigate how the college defines its aims and objectives for homeopathy training and to what extent those objectives are realised in practice.

Results: Results from this study appear to confirm findings from other studies which similarly emphasise the importance of coherence, transparency, and interests of the student. Consideration of the emergent themes of this study in the light of current literature and practice has resulted in formulation of a tentative hypothesis, that the three categories which this study has been able to identify and empirically substantiate, together with their antonyms, are able to characterise quality in Professional Education and Training.
Acupuncture: Efficacy as a treatment option for sexual dysfunction secondary to antidepressants

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Background: Selective Serotonin Reuptake Inhibitors (SSRIs) and Serotonin Noradrenaline Reuptake Inhibitors (SNRIs) are known to cause sexual dysfunction, with prevalence rates reaching 50% to 90%. Emerging research indicates that acupuncture may be an effective treatment option for sexual dysfunction, such as impotence, loss of libido and inability to orgasm, experienced secondary to antidepressants.

Objective: The purpose of this study was to examine the potential benefits of acupuncture in the management of sexual dysfunction brought on by SSRI and SNRI therapies.

Method: Participants experiencing adverse side effects from their antidepressant medication were referred for acupuncture treatment at the START Clinic for the Mood and Anxiety Disorders, a tertiary care mood and anxiety disorder clinic in Toronto. Participants received a Traditional Chinese Medicine assessment and followed an acupuncture protocol for 12 consecutive weeks. The acupuncture points used were Kidney 3, Governing Vessel 4, Urinary Bladder 23, with Heart 7 and Pericardium 6. A questionnaire package consisting of self-report measures assessing symptoms of depression, anxiety and various aspects of sexual function was completed on a weekly basis.

Results: Significant improvement was noted in all areas of sexual functioning in male participants, as well as in both anxiety and depressive symptoms. Female participants reported a significant improvement in libido and lubrication.

Conclusion: This study suggests a possible role for acupuncture in treating the sexual side effects of SSRIs and SNRIs, and illustrates the potential benefit of integrating medical, complementary, and alternative therapies.
Effectiveness of vitamin D in the treatment of mood disorders: A review

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Background: Depression is characterized by feelings of sadness that last for two weeks or longer. Depressed individuals tend to feel helpless and hopeless, blaming themselves for experiencing such emotions. They may become overwhelmed and exhausted, stop engaging in routine activities, and withdraw from family and friends. Some may experience thoughts of death or suicide. Anxiety exists in a spectrum of mood disorders; however, for the purpose of this review, Generalized Anxiety Disorder (GAD) will be the focus. GAD is diagnosed in patients who undergo chronic stress and anxiety, being unable to cope with everyday life. This can coincide with depression or substance abuse. Pharmacological medications or psychological interventions are the most common treatments for GAD.

Objectives: Recent scientific research is investigating the connection between insufficient vitamin D and the pathogenesis of mood disorders, as well as the nutrient’s potential as a therapeutic agent. Vitamin D deficiency is prevalent in the North American population. Yet vitamin D deficiency is frequently found amongst individuals suffering with anxiety disorders, particularly GAD. Further research in this field is warranted. However several epidemiological studies have shown a relationship between low levels of vitamin D and the presence of depression. Few trials have found a potential trend towards the reduction of depressive symptoms from vitamin D supplementation; though study limitations have restricted the conclusions that can be drawn.

Conclusions: This systematic review will discuss the use of vitamin D and its potential therapeutic use for depression and GAD, either as a sole therapy or in conjunction with pharmacological treatment.
Mapping the characteristics of practitioners in acupuncture practice in western countries: a review based on acupuncturists survey

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Background: In spite of rapid growth quantity of acupuncture providers and use of acupuncture services, knowledge about the practitioners who provide acupuncture treatment, where they provided acupuncture treatment, what kind of conditions they treat, and how the conditions treated among different countries or regions in the west are insufficient and unclear.

Objective: To map the characteristics of practitioners in acupuncture practice in the west based on a systematic review of acupuncturists surveys.

Method: Medline and Enbase databases were searched to collect surveys on acupuncturists in the recent two decades. Data extraction, including general features (year and region, survey mode, sampling frame, random sample, sample size, response rate and measurements), demographics, training, clinical research, workload and payment and practice characteristics, were all collected.

Finding: Totally 11 literatures were eligible, four of them were considered as high quality surveys. In the light of the included surveys, we mapped the characteristics of practitioner in acupuncture practice as following: 1) demographics: the mean age of majority of them may in their 40s; a slightly over half proportion is female; an estimated 70% were white ethnicity; 2) training: approximately 70% trained in the local institutions and 20 to 30% in China; 3) clinical research: most of them believed in acupuncture effect, and prioritized patient care over both reading research evidence and undertaking research; 4) workload features and payment: more than 40 weeks of practice in a typical year; about 20 to 30 patient visits per week; more than 45mins for the initial visit and 30mins around for follow-up visit; about 5% fees were covered by insurance; 4) practice characteristics: about 50-70% practiced solo in independent clinic; a median of around 11 years in practice; applied traditional and also integrated western or other kind of acupuncture style in practice; musculoskeletal and painful problems, psychiatric disorders, infertility conditions were considered as commonly treated diseases with variation from different sites.
Dietary flaxseed and flaxseed oil as a complementary approach to trastuzumab treatment of HER2 overexpressing (HER2+) breast cancer

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Background: Trastuzumab (TRAS), the primary treatment for HER2+ breast cancer, is expensive and limited by resistance. Many breast cancer patients take complementary therapies including flaxseed (FS) and its oil (FSO) which have noted anti-cancer effects.

Objectives: To determine the interactive effects of FS and FSO with TRAS in HER2+ breast cancer.

Methods: In two studies, athymic mice with established BT-474 tumours were fed a basal diet (control), a 4% FSO diet (Study 1) or a 10% FS diet (Study 2) with or without TRAS (2.5mg/kg) treatment. Tumours were palpated weekly for 4 (Study 1) or 5 (Study 2) weeks and analyzed for cell proliferation and apoptosis, for mRNA and protein biomarkers of growth factor signaling (HER2, MAPK, Akt, PTEN), and fatty acid profile.

Results: FSO and FS alone showed no effects on tumour growth while TRAS significantly reduced tumour size in both studies. In study 1, FSO+TRAS tumours were significantly smaller (41%), with lower cell proliferation (61%) and higher apoptosis (39%) compared to TRAS2.5 tumours. Similar reductions in growth biomarker expressions were observed when TRAS treatment was combined with FSO. In study 2, there were no differences in tumour size, cell proliferation, apoptosis or biomarker expressions between the TRAS and FS+TRAS groups.

Conclusions: FSO and FS alone do not affect tumour growth; however, FSO but not FS enhances TRAS tumor-reducing effect. Mechanisms of FSO-TRAS interaction involve reduced HER2 signaling. Results could lead to an inexpensive complementary treatment for HER2+ patients being treated with TRAS.
CaseRe3_A digital repository for case reports in integrative therapies

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Background: Case reports offer descriptive and observational data but few practitioners have resources to design, conduct, and publish one. Many integrative healthcare programs require senior students to complete a case report as a final project. However, the vast majority are lost once the student graduates, and orphaned case reports become part of the gray literature.

Objectives: CaseRe3 is an open access repository of peer and open reviewed case reports. Its initial focus is manual therapies, with potential expansion to case reports in other integrative therapies.

Methods: CaseRe3 is a joint project developed by the Massage Therapy Association of British Columbia and Sigma Applied Research. Our solution leverages open source technology using a custom installation of DSpace running on virtual servers. DSpace can store and retrieve items including documents, associated data files, and video/audio files, with full text indexing. Items are organized by communities and collections, which may be public or private. Authors who contribute items retain copyright to their work and allow its use under a Creative Commons license.

Results: We are currently in the pilot phase of the project. We envision researchers using the repository to gather real world information for protocol development, to estimate sample or effect sizes, and note possible adverse responses or unanticipated positive treatment outcomes. Clinicians may identify potential treatment strategies for patients/clients. Educators can use CaseRe3 as a teaching resource and to create virtual communities within their institutions.

Conclusions: Repositories such as CaseRe3 have tremendous potential in advancing massage therapy research and evidence-informed practice.
Chronic and terminal illness management with Complementary and Alternative Medicine: Older adults’ reliance on family caregivers

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Background: Elderly patients diagnosed with chronic or terminal illnesses may require greater involvement of family in managing medications, and decision-making around using traditional and complementary and alternative medicine (CAM). Healthcare providers (HCPs) are often reluctant or unprepared to discuss CAM use for chronic or terminal illnesses, yet patients continue to use CAM and frequently turn to family caregivers for CAM information and support. However, family caregivers may hold differing health beliefs, values, and experiences with CAM than their care-recipient.

Objectives: This research describes the experiences of family caregivers of older Chinese patients who used CAM to manage their chronic or terminal illnesses.

Methods: Using a qualitative research design (n=23), 49 in-depth interviews were conducted.

Results: Our results indicate that patients who generally had negative interactions with HCPs around CAM use showed greater reliance on family caregivers in accessing and using CAM. Using CAM for chronic illness management was often linked to "family heritage"; to perceptions that CAM was superior, i.e. natural and less harmful; conversely, others held beliefs that CAM use was inappropriate or ineffective. Several participants strongly distrusted their care recipient's use of CAM, and refused to disclose such use to HCPs.

Conclusions: Lack of communication with HCPs about CAM use could result in adverse health consequences for patients, and lead to caregivers taking sole responsibility for negotiating such CAM use. Recommendations for future research include a greater focus on caregivers' preparedness and attitudes towards CAM use, and how to integrate the patient, caregiver and HCPs into open and collaborative dialogue about treatment choices.
Scientific evaluation of North American native plants treatment for different types of diabetes mellitus: Randomized controlled trial

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Background: Native plants are very much important for public health as well as for plant and animal protection.

Objectives: The studies were undertaken to assess the hypoglycemic effect of alcoholic extracts of *Artemisia tridentata* Nutt., *Chimaphila umbellata* (L.) Nutt., *Eriogonum fasciculatum* Benth., *Eupatorium serotinum* Michx., *Juniperus scopulorum* Sarg., and *Portulaca oleracea* L. were studied in streptozotocin induced diabetes mellitus.

Methods: Albino rats were made diabetes mellitus by intraperitoneal injection of streptozotocin (30 mg/kg) in citrate buffer. On confirmation of diabetes mellitus after 48 hours of injection, alcoholic extract of medicinal plant (250 or 500 mg/kg) or glibenclamide (300 μg/kg) administered orally to Albino rats for 30 days.

Results: These plants produced dose and duration dependent hypoglycemia very similar to that of glibenclamide. At the end of one month, serum glucose levels of streptozotocin diabetes mellitus Albino rats with daily doses of 500 mg/kg of any one of the alcoholic extract were (more or less) comparable to that of normal Albino rats. The anti-diabetes mellitus effect of these plants might be due to enhanced insulin secretion from the viable β-cells of islets of Langerhans as evidenced by presence of more viable β-cells and less necrotic changes in the pancreas of diabetes mellitus Albino rats as compared to that of control diabetes mellitus Albino rats.

Conclusions: In consequence, these plants appear to be better alternative for the diabetes mellitus patients who are prone to develop side effects with the regular use of synthetic hypoglycemic drugs as these are also plants devoid of any untoward or toxic effects.
Behind the effectiveness of the third actor in Flower Essence Therapy: A history of the elaboration of the preparation of the Flower Essence

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Background: This research traces the history of the development of the method of preparation of Flower Essences from an interdisciplinary perspective aiming to explain the motivations that led to this particular method of preparation aiming its therapeutic efficacy and cost effectiveness. The therapeutic process in Flower Essence Therapy unfolds into a triangular relationship between the patient, the therapist and the Flower Essence. It is therefore of foremost importance to understand the development and reasons behind its method of preparation. This investigation integrates knowledge from diverse fields of knowledge to explain the third actor in Flower Essence Therapy.

Objectives: To trace the history of preparation of herbal remedies up to the 1930s, that could shed light to Dr. Edward Bach’s choices in the preparation of the remedies he developed, alongside with the methods of preparation, conservation and dilution.

Methods: This study consists of a historical investigation and literature review of the knowledge available in the 1930s—at the time of the development of the essences by Dr. Edward Bach in the fields of Homeopathy, Herbalism, Anthropology and Agricultural Chemistry.

Results: The method of preparation of the Flower Essences developed by Dr. Edward Bach was taken from Homeopathy. It was initially developed by Dr. Robert Thomas Cooper (1844-1903), and named as the Cooper’s Arbivotal System, using sunlight and mineral water to produce herbal tinctures. Thus, the method used for preservation of the essence, was taken from the folkloric “cordials”—first tonics to constitute both 18th century American and European Pharmacopeia.

Conclusions: Flower Essences resulted from the combination of distinct of herbal remedies preparation methodologies, aiming at the efficacy of the remedies, and their cost effectiveness in their dilutions.
User-perceived effectiveness safety outcomes of paediatric Complementary & Alternative Medicines

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**Background:** With increasing use of complementary and alternative medicines (CAMs) in children, researchers have begun to focus on the user-perceived effectiveness and safety (UPES) outcomes of these therapies. A systematic review of all such studies was therefore needed.

**Objectives:** To summarize the state of recent research on UPES outcomes of paediatric CAMs published in peer-reviewed journals.

**Methods:** The Knowledge Network, EBSCO Host, and PedCAM mega-databases -covering articles indexed by AMED, Alt HealthWatch, CINAHL, CAB Abstracts, IPA, MEDLINE, EMBASE, PsychINFO, CAMEOL, IBIDS, Medicines Complete, and NAPRALERT- were searched from January 2000 to July, 2011, using pre-selected keywords. ON, DS and/or YK independently screened titles, abstracts, full papers, and reference sections of observational studies on CAM use in paediatric subjects ≤18 years that investigated UPES outcomes. Relevant aspects of identified studies were then extracted and critically appraised.

**Results:** Of the 41 included studies, over half were conducted in North America, as against much fewer studies in the UK and Europe, and none in South America. Conducted mainly in hospital settings, and utilizing mostly parent-proxy reports obtained via self-completion questionnaires or face-to-face interviews for children in mainly chronic health conditions, they generally reported high levels of user-perceived effectiveness outcomes, with low levels of user-reported adverse effects. However, the general use of small, non-representative sample sizes and non-standardized outcomes measures instruments, among other short-comings, highly compromised these findings. Safety outcomes were also often not reported.

**Conclusions:** Standardized instruments are needed to improve assessment of UPES outcomes of CAM use in specific paediatric health conditions.
Addison’s Disease and Complementary and Alternative Medicine

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Objectives: The use of complementary and alternative medicine (CAM) is becoming recognized as a favourable method of self-care amongst patients with long term health issues. This study aimed to determine the perceptions and use of CAM in patients with an Addison’s disease diagnosis.

Methods: A short questionnaire was distributed via an on-line social network and an Addison’s support group newsletter emailing list. The inclusion criteria developed for the selected respondents was an Addison’s disease diagnosis. The results were collected and analyzed using the survey engine and excel.

Results: A total of 43 percent of respondents reported CAM use. A strong negative relationship was discovered between users of CAM and length of diagnosis. There was no notable relationship between users and satisfaction with health. Roughly 60 percent of both users of CAM and non-users reported health satisfaction. The reported perceived knowledge of the specialist does not appear to impact use of CAM by the patient. Approximately one third of respondents reported being knowledgeable about CAM. And a significant 60 percent expressed an interest in learning more about CAM.

Conclusion: The use of CAM therapies is not a specific indicator for health satisfaction in Addison’s disease patients, however it is a popular form of self-care. Due to the demands of a chronic illness such as Addison’s and an overburdened health care system is its imperative that health care move towards a patient-centred model of care that is aware of and able to support and inform patient’s’ preferences for self-care.
Injection treatment following calcaneal tenotomy in rats: Does Truameel and/or PRP make a difference?

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Background: A pilot study indicated that cellular changes occur over time post-tenotomy, resulting in an inability to reappose tenotomized tendons after two weeks. Injection of platelet rich plasma (PRP) and Traumeel®S, have been used clinically to promote healing of muscle and tendon injuries (Sanchez et al., 2009; Creaney & Hamilton, 2007).

Objectives: An injection treatment study was developed to examine the effect of post-calcaneal tenotomy injections of Traumeel®S and PRP on the biomechanical and cellular properties of the gastrocnemius muscle/calcaneal tendon unit.

Methods: Thirty-six, 250g Sprague Dawley rats were used (72 hind-limbs). The limbs were randomly allocated into one of four groups (tenotomy+Traumeel®S, PRP, Traumeel®S+PRP, saline or carbocaine; and no tenotomy+saline). Following sacrifice at 2, 4 and 6 weeks, repair tension was measured using a Shimpo force gauge. Tissue biopsies were collected from the calcaneal tendon, myotendinous junction, and the gastrocnemius muscle for western blot and histological analysis.

Results: Repair tension decreased in all treatment groups, making reapposition possible in 10/12 specimens at 6 weeks; none were reapposable after 2 weeks in the pilot study. The lowest repair tensions at 6 weeks were found in the Traumeel®S (21.13±3.89N) and PRP+Traumeel®S (21.21±3.86N) groups. The PRP+Traumeel®S group also had the highest concentration of b-FGF protein compared to control at 4 and 6 weeks post-tenotomy (124% and 121% respectively).

Conclusions: Preliminary results suggest that post-tenotomy injections of Traumeel®S, PRP or a combination of both can reduce repair tension and influence cellular properties at four and six weeks post-tenotomy compared to untreated tenotomized limbs.
CONSORT Extension for N-of-1 Trials (CENT) guidelines

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Background: N-of-1 trials have been used in medicine to generate treatment information when evidence from randomized controlled trials (RCTs) is not available or applicable. N-of-1 study design maintains the methodological safeguards provided by RCTs yet avoids the disadvantages associated with large trial. A standardized method of reporting of N-of-1 trials, such as the Consolidated Standards of Reporting Trials (CONSORT), would greatly improve the quality and consistency of trial reports in this area.

Objective: To develop a CONSORT Extension for N-of-1 Trials (CENT).

Methods: Checklist items for CENT were derived from three systematic reviews on N-of-1 conduct, analysis and meta-analysis. A structured process of obtaining information from a group of experts to refine and finalize the CENT guidelines was carried out using on-line questionnaires and an in person meeting.

Results: There were 44 unique respondents between the two rounds of questionnaires. Based on questionnaire results, topics chosen for discussion at the in person meeting included: terminology (what is “N-of-1”?), randomization and blinding, research vs. clinical care, and analysis and meta-analysis. The CENT checklist was refined and adapted to the format of the most recent CONSORT 2010 statement.

Conclusion: N-of-1 trials may promote an evidence-based approach to therapy so that families, health care providers and policy-makers can make informed choices, and are relevant to both conventional and complementary and alternative medicine. The CONSORT ‘extension’ will facilitate critical appraisal and interpretation of N-of-1 trials by providing authors with guidance on how to improve reporting.
Safety and efficacy of exercise on symptoms, quality of life, drug interactions, fall frequency and prognosis of Parkinson’s disease: A systematic review of the literature.

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Background: Parkinson’s disease (PD) is a chronic debilitating condition affecting 1-2% of population. In animal models, exercise has demonstrated significant attenuation of neuronal death of dopaminergic neurons. The full impact of exercise on the morbidities associated with PD and any potential safety concerns, however, have not been documented in a systematic manner.

Objectives: Systematic review to explore the safety and efficacy of various forms of exercise on the health of patients with PD.

Methods: PubMed and EMBASE were searched from inception to (DATE) for clinical trials, observational studies, and animal data pertaining to the use of exercise therapy by patients with PD. All forms of exercise were included in the search, including but not limited to aerobic exercise, resistance training, dance, and Tai chi. The impact of the intervention was analyzed by examining the motor outcomes, non-motor outcomes, quality of life, drug-exercise interactions and adverse events. Data from animal studies were used to assess mechanism of action.

Results: We identified a total of 5808 studies; of these 84 human trials, 33 observational studies and 27 animal studies were eligible for inclusion. Aerobic exercises resulted in improvement in the Time-Up & Go, while balance training improved postural stability. Most studies reported improvement in the quality of life; however analysis of the impact on non-motor symptoms yielded inconsistent results. Three clinical trials reported adverse events that may be associated with the intervention.

Conclusions: Exercise is safe for patients with PD and is associated with significant improvement in the lives of PD patients.
Perceptions of the use of complementary therapy and Siddha medicine among rural patients with HIV/AIDS: A case study from India

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Allopathic practitioners in India are outnumbered by practitioners of traditional Indian medicine, such as Ayurveda and Siddha. These forms of traditional medicine are currently used by up to two-thirds of its population to help meet primary health care needs, particularly in rural areas. Gandeepam is one of the pioneering Siddha clinics rural Tamil Nadu which is specialized in providing palliative care to HIV/AIDS patients living in rural areas of Tamil Nadu. This presentation examines and critically discusses the perceptions of local HIV/AIDS patients regarding the efficacy of Siddha treatment and their motivation in using this form of complementary treatment. The issues of gender equality in the access of HIV/AIDS treatment as well as the possible challenges in complementing allopathic and traditional/complementary health sectors in research and policy are also discussed. The data shows that according to the point of view of the interviewees, this alternative form of medicine might be useful in improving the quality of life for the patients affected by this disease in rural areas in the short term. This presentation concludes by emphasizing the importance of complementing allopathic treatment with traditional medicine for short-term symptoms and some opportunistic diseases present among HIV/AIDS patients.
Perceptions and uses of plants for reproductive health among traditional midwives in Ecuador: Moving towards intercultural pharmacological practices.

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Traditional midwives and their practices are very important for the reproductive health of numerous women in Latin America, and in Ecuador more specifically. Despite this, a limited number of studies linking an ethnobotanical analysis with socio-cultural concerns have been carried out regarding traditional uses of plants in reproductive health in traditional midwifery in this country. This study seeks to contribute in bridging this gap by analyzing the relevance of the uses of medicinal plants for reproductive health among the indigenous midwives in the city of Otavalo, belonging to different age groups and geographic backgrounds. The study also analyzes the perceptions of traditional midwives regarding allopathic drugs for reproductive health, as well as any possible overlapping in the use of medicinal plants and allopathic drugs in the traditional midwifery practices. Some considerations of the implications of medicinal plants for reproductive health and its changes among traditional midwives are also made.
Rhodiola rosea for nurses on shift work: A randomized controlled trial

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Background: Fatigue is one of the many consequences of shift work in the nursing profession. Natural health products (NHPs) for fatigue are becoming an increasingly popular topic of clinical study; one such NHP is Rhodiola rosea. A well-designed, rigorously conducted RCT is required before therapeutic claims for this product can be made.

Objective: To compare the efficacy of R. rosea with placebo for reducing fatigue in nursing students on shift work.

Methods: A parallel-group randomized, double-blinded, placebo-controlled trial of 18-55 year old nursing students from the University of Alberta, participating in clinical rotations between January and September 2011. Participants were randomized to take either 364 mg (2 capsules) of R. rosea or identical placebo at the start of their wakeful period and up to one additional capsule within the following four hours daily for 42 days. The primary outcome was reduction in fatigue measured using the vitality subscale of the RAND-36 cross-validated by the visual analogue scale for fatigue (VAS-F).

Results: A total of 48 participants were randomized to R. rosea (n=24) or placebo (n=24). The mean difference between groups on the vitality subscale score at day 42 was 25.1 [95% CI 5.59, 33.6] favoring placebo. The mean difference between groups on the VAS-F score at day 42 was 2.8 [95% CI -4.2, -0.83] favoring placebo.

Conclusion: Among nurses on shift work, R. Rosea compared with placebo worsened fatigue, and therefore should not be recommended at this dose and duration. There were no significant differences in adverse events between treatment groups.
Patients’ perspectives of the informed consent process to receive spinal manipulation therapy: A research proposal

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Background: Spinal Manipulation Therapy (SMT) is a non-invasive manual procedure that is applied to specific spinal structures with therapeutic intent. Despite evidence of benefit, evidence surrounding adverse events is limited and accurate risk estimates are unavailable creating a challenge for practitioners when disclosing risk information during the informed consent process.

Objectives: The objective of this poster is to describe a research proposal designed to explore how patients perceive the process of providing informed consent for SMT, how they define their role in this process, and their understanding of the disclosed risk information.

Methods: The literature on informed consent and SMT was reviewed and different methodological approaches were explored. Grounded theory was identified as a useful methodology to explore the process of informed consent. A research protocol was developed based on this methodology and the informed consent literature.

Results: The research proposal will be presented including: background information and rationale; methodological approach; sampling and participant recruitment; data collection; and analysis. Data collection will begin in September 2012.

Conclusion: This research assumes that reality is understood subjectively through human interpretation and that qualitative research methods can be used to explore these interpretations through social interactions. Grounded theory provides detailed procedures for developing a theory to explain social process, such as informed consent, which makes it a useful methodology to guide our data collection and analysis.
Media construction of complementary and alternative medicine use in childbirth in Canadian newspapers from 2000-2012

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Background: CAM use in childbirth is increasing in Canada and more Canadians are seeking alternatives to conventional birthing practices. Newspaper media are a potential source of information about CAM, and it is important to examine the types of information and views they present, as this can affect individual’s decision making and perceptions about CAM use in childbirth.

Research question: What information do Canadian newspapers provide regarding CAM use in childbirth (type of information, attitudes, and perceptions)?

Methods: We conducted a mixed-methods study of Canadian newspaper representations of CAM use in childbirth from 2000-2012, using the University of Calgary newspaper database Canadian Newsstand. We defined “CAM” as any practice outside of conventional maternity care. Keyword searches gave 428 relevant articles, from which a random sample of 190 articles was selected, representative by year. We used qualitative content analysis to analyze the data and recorded counts of each code.

Results: We found great variety of birth-related CAM modalities discussed in Canadian newspapers such as acupuncture, yoga, and midwifery. Most articles (45%) were anecdotal, and most gave positive comments about CAM (29%). 23% of articles cited decreases in medical interventions as an advantage to using CAM, while 21% cited lack of safety as a disadvantage.

Discussion: There is some depth and detail in newspaper articles about CAM, but most articles placed CAM in a positive light, lacking critical appraisal. Newspapers seem to be giving a one-sided view of CAM use in childbirth, which may lead to poorly-informed decisions and misperceptions about CAM.
Attitudes and perceptions of Calgary maternity care providers towards complementary and alternative medicine: A qualitative study

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Background: Canadian women have a growing interest in non-conventional birthing methods (e.g. midwifery, home birth, acupuncture). It is important to understand the views of conventional maternity care providers towards women using alternatives, because medical professionals are often in a position to refer and advise, to offer information, and to encourage or discourage women from using alternatives.

Research question: What are the views and opinions of Calgary maternity care providers towards (a) childbirth – normal birth, use of technology, and obstetric interventions; (b) use of alternative birth practices (incl. CAM); and (c) integration of alternative practices into conventional care?

Methods: We conducted qualitative interviews with 3 Calgary obstetricians, 2 family physicians, and 6 labour and delivery nurses. Interviews were analyzed using qualitative content analysis, with the aid of Atlas.ti software.

Results: Interview data revealed five main themes: 1) Definitions of ‘normal birth’ and inherent risks of birth, 2) Technology – a “Just in case” option, 3) Conditions for CAM use, 4) Scope of practice of midwives and doulas, and 5) Women’s choice. Most participants had positive views towards CAM use, midwives, and the concept of “normal birth”. Obstetric technology was seen as a back-up tool for unexpected complications. Doulas were seen most negatively when they overstepped their professional boundaries (i.e. giving obstetrical advice to patients).

Discussion: These results have implications for the development of collaborative maternity care models in Canada; clear definition of boundaries between professionals and openness towards alternatives are important factors for successful collaboration between conventional and alternative care providers.