

- (1) *Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, USA*  
 (2) *Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA*  
 (3) *New England School of Acupuncture and Harvard Medical School, Boston, MA, USA*

**Purpose:** To explore patient experiences, perceived changes, and health benefits associated with a tai chi (TC) program in a clinical trial of patients with heart failure (HF).

**Methods:** We randomized 100 patients with chronic systolic HF (NYHA Class 1–3, ejection fraction  $\leq 40\%$ ) to a 12-week group TC program or an education control. At 12 weeks, semi-structured interviews were conducted on a random subset ( $n=32$ ;  $n=17$  in TC,  $n=15$  in control), audiorecorded and transcribed verbatim. Two independent reviewers extracted information using grounded-theory methods for emergent themes. We explored differences in themes/sub-themes between the groups, and examined qualitative association with changes from baseline to post-intervention in previously reported measures (e.g., Minnesota Living with HF, Cardiac Exercise Self Efficacy and Profile of Mood States).

**Results:** The mean age ( $\pm$ SD) was  $67 \pm 11$  years, baseline EF  $29 \pm 8\%$ , median NYHA class 2. We identified themes related to illness perspective, relationship to self, physical and psychosocial benefits, and relationship to others (e.g., spouse). Common themes emerged from both groups including: acceptance of illness, hope, motivation to improve health, and self-efficacy related to activity/exercise and diet. However, the groups differed in the source of patients' locus-of-control, with those in education more external (e.g., gain hope from family/friends) versus those in TC more internal (e.g., gain hope/optimism from within one's self). Additional themes in TC included self-awareness, pride, calm, life appreciation, decreased stress reactivity. These themes mirrored improvements in quantitative measures (quality-of-life, self-efficacy, and mood) in TC compared to control. Patients in TC also reported physical benefits (e.g., improved balance, endurance).

**Conclusion:** Positive themes emerged from both groups, although there were qualitative differences in concepts such as locus-of-control and self-efficacy. Those in tai chi reported additional gains such as self-awareness, stress reduction, and balance. Future studies of mind-body exercise might further examine locus-of-control and self-efficacy as potential mediators of effect.

**Contact:** Gloria Yeh, gyeh@bidmc.harvard.edu

## P02.85

### Preoperative Plasma Zinc Deficiency Common in Cardiac Surgery Patients but Does Not Affect Clinical Outcomes in the Intensive Care Unit

Lesley Braun (1), Frank Rosenfeldt (1), Ondine Spitzer (2), Lisa Hose (2), Cathy Stanguts (2), Bianca Levkovich (1), Michael Bailey (2)

(1) *Alfred Hospital, Monash University, Melbourne, Victoria, Australia*

(2) *Monash University, Melbourne, Victoria, Australia*

**Purpose:** Zinc deficiency may have important effects on clinical outcomes in intensive care unit (ICU) patients because zinc is involved with immune response, wound healing, cognitive function, DNA repair and in reducing oxidative stress. This

study aimed to define the status of pre-surgery plasma and erythrocyte zinc in cardiothoracic surgery patients and evaluate its relationship with intensive care unit (ICU) outcomes.

**Methods:** A prospective study was conducted whereby consecutive, consenting, elective cardiothoracic surgical patients at a public hospital provided a fasting blood sample on the day of surgery. Patient records provided demographic information and post-operative outcomes: ventilation time, length of stay in the ICU and hospital and Acute Physiology and Chronic Health Evaluation (APACHE) III scores (a validated sign of overall morbidity). Multivariate analysis was used to determine post-surgery associations with pre-surgery zinc status.

**Results:** Fifty-six patients with a mean age of 68 years participated. Of the total cohort, 53% ( $n=30$ ) had plasma levels  $< 12$   $\mu\text{mol/L}$  and 5.5% ( $n=3$ ) had erythrocyte zinc  $< 160$   $\mu\text{mol/L}$ , indicative of deficiency. A significant association was found between lower plasma zinc levels and higher BMI ( $p=0.034$ ) but not age or diabetes and a significant association for higher pre-surgery erythrocyte zinc and advanced age ( $p=0.027$ ) but not BMI or diabetes. There was no significant difference in incidence of zinc deficiency between coronary artery bypass and valve surgery patients. No significant associations were found between pre-surgery plasma zinc or erythrocyte zinc levels and, APACHE III, ventilation time, ICU length of stay or hospital length of stay.

**Conclusion:** This is the first study to show that zinc deficiency, diagnosed via plasma levels is not uncommon in cardiac surgery patients. Additionally, neither presurgery plasma nor erythrocyte zinc status was associated with adverse ICU outcomes such as APACHE III, ventilation time, length of stay in ICU or hospital.

**Contact:** Lesley Braun, l.braun@alfred.org.au

## P02.86

### Feasibility and Preliminary Effects of Centering for Chronic Pelvic Pain: Integrative Group Visits for Medically Underserved Women

Maria T. Chao (1), Priscilla D. Abercrombie (1), Larissa G. Duncan (1), Trilce Santana (1), Alexandra M. Chang (1)

(1) *University of California, San Francisco Osher Center for Integrative Medicine, San Francisco, CA, USA*

**Purpose:** The Centering model is an innovative approach to group-based healthcare across the lifecourse that integrates healthcare assessment, education, and social support. We adapted the Centering model to provide comprehensive care for women with chronic pelvic pain (CPP) using an integrative health approach and piloted the program to assess feasibility, acceptability, and preliminary outcomes.

**Methods:** We developed curriculum for ten sessions of Centering CPP focused on improving quality of life and managing symptoms through integrative approaches, such as mind-body strategies, yoga, and nutrition. We pilot tested the curriculum with three groups of CPP patients from a university-affiliated and public hospital-affiliated clinic. We collected qualitative and quantitative data at baseline and three follow-up time points.

**Results:** Centering CPP participants ( $n=26$ ) were on average 40 years of age; 76% women of color; 39% attended some college; and 68% had incomes of less than \$35,000. Analyses including all participants showed trends toward improvement in quality of life, functional limitations, social and emotional

well-being, and sexual functioning. As-treated analyses including women who attended 4 or more sessions ( $n=16$ ) demonstrated that average unhealthy days in the past month decreased from 24 at baseline to 18 at ten-month follow-up ( $p<0.05$ ). Depression scores decreased from 12.1 to 9.0, a clinically relevant difference from minor depression to minimal symptoms ( $p<0.05$ ). Patient-centered measures of symptom severity using the MYMOP scale decreased from 4.2 to 3.1 ( $p<0.01$ ). No improvements were observed for pain catastrophizing or healthcare empowerment scales.

**Conclusion:** An integrative health approach implemented through group medical visits may address a range of physical and psychosocial patient-centered outcomes among patients with CPP. To advance the evidence base for programs such as Centering CPP, additional research is needed comparing this approach with usual care and on targeted efforts to enhance patient engagement and participation.

**Contact:** Maria T. Chao, chaom@ocim.ucsf.edu

### P02.87

#### Impact of Sociodemographic Factors on Attitudes and Beliefs Towards CAM Use Among Cancer Patients

Sagar K. Chokshi (1), Susan Q. Li (2), Christina Seluzicki (2), Krupali Desai (2), Jun J. Mao (2)

(1) Rowan University School of Osteopathic Medicine, Voorhees, NJ, USA

(2) University of Pennsylvania Health System, Philadelphia, PA, USA

**Purpose:** Sociodemographic factors have been associated with the use of CAM among cancer patients, yet little is known about how these factors impact attitudes and beliefs towards CAM use.

**Methods:** We conducted a cross-sectional survey study at an urban, academic cancer center among adult patients with a primary diagnosis of cancer. Sociodemographic variables were collected by self-report and attitudes and beliefs were measured using the validated Attitudes and Beliefs about CAM (ABCAM) instrument. ABCAM is based on the Theory of Planned Behavior and measures three major components of CAM use: expected benefits, perceived barriers, and subjective norms.

**Results:** Among the 969 participants (response rate 82.7%), the mean age was 59.1 (SD 12.1) and 63% were female. Seventy-nine percent identified themselves as White, 16% as Black, 3% as Asian, and 2% as other. A majority (74.4%) reported an education level of some college or above. Cancer diagnoses included: breast (315), gastrointestinal (308), lung (297), and other cancer types (48). Younger patients ( $\leq 55$  years) had greater expected benefits ( $p<0.001$ ) and subjective norms ( $p<0.001$ ) than older patients ( $>65$  years), but their perceived barriers to CAM use did not differ. Compared to male patients, females had higher expected benefits ( $p<0.001$ ) and less perceived barriers ( $p=0.009$ ). Non-whites and white patients only differed in perceived barriers: non-whites reported more perceived barriers than their white counterparts ( $p<0.001$ ). Furthermore, patients with higher education had greater expected benefits ( $p<0.001$ ) and less perceived barriers ( $p<0.001$ ).

**Conclusion:** Sociodemographic factors have a substantial impact on the attitudes and beliefs about CAM use among cancer patients. Understanding and addressing these variations have important implications in designing patient-centered integrative cancer care for a diverse group of cancer patients.

**Contact:** Sagar Chokshi, chokhsa@rowan.edu

### P02.88

#### Effect of Far Infrared Emitted by Bioceramics on Clinical Measures of Physical Fitness

Francisco Jose Cidral Filho (1), Michael Jarvis (2), Christopher Midttun (2), Daniel F. Martins (1)

(1) Palhoça, Florianopolis, SC, Brazil

(2) Florida Atlantic University, Boca Raton, FL, USA

**Purpose:** To evaluate the effect of Far Infrared therapy emitted by bioceramics on flexibility, grip strength and respiratory capacity in a randomized double blind placebo controlled trial involving 9–12 Basketball Players of the Florida Atlantic University (ages 18–22).

**Methods:** Each participant was randomized to wear either a BioPower™ bioceramics shirt (bioceramics silkscreened shirt) or a Sham shirt (without bioceramics). Baseline evaluations were conducted on week 1. On weeks 2 and 3 the players wore the shirts for three hours three times a week during practice (short-term use). On weeks 4 and 5 the players wore the shirts 7 days a week throughout the day (extended use). Flexibility was measured with the sit-and-reach test; the grip strength of the dominant hand with a hand dynamometer and respiratory capacity with a spirometer (Forced Vital Capacity - FVC, Forced Expired Volume in one second - FEV1 and Peak expiratory flow - PEF).

**Results:** Short-term use of BioPower™ bioceramics shirts did not affect flexibility whereas extended use increased it in 5.5% and 14.1% (weeks 4 and 5). In comparison to baseline levels, short-term and extended use of BioPower™ bioceramics shirts increased grip strength (5.6% - week 3), 10.8% and 10.9% (weeks 4 and 5). Lastly, short-term use of BioPower™ bioceramics shirts increased FVC (5.8% - week 3) and FEV1 (5.9% - week 3) but did not affect PEF, whereas long-term use increased FVC (5.8% - week 4); FEV1 (15% and 10% - week 4 and 5) and PEF (52.77% and 50.9% week 4 and 5).

**Conclusion:** Far Infrared therapy emitted by BioPower™ Bioceramics Shirts increased flexibility, grip strength and respiratory capacity in Basketball Players of the Florida Atlantic University. Extended use induced more significant results than short-term use.

**Contact:** Francisco Jose Cidral Filho, cidral@gmail.com

### P02.89

#### Integrative Care Therapies and Pain in Hospitalized Children and Adolescents: A Retrospective Database Review

Sian Cotton (1), Christina M. Luberto (1), Lois H. Bogenschutz (2), Elizabeth E. Hathaway (1), Jeffery Dusek (3)

(1) University of Cincinnati, OH, USA

(2) Cincinnati Children's Hospital Medical Center, Cincinnati, OH, USA

(3) Allina Health, Minneapolis, MN, USA

**Purpose:** Pain is a common problem for pediatric inpatients. Integrative care therapies have demonstrated efficacy as adjunctive approaches to pain management among adult inpatients. However, little research exists on the efficacy of integrative care therapies for pain in pediatric inpatients. The purpose of this study was to examine associations between integrative care therapies and pain and relaxation outcomes in hospitalized children/adolescents at a large Midwestern pediatric hospital.