

(5) *Computer Science and Engineering, Biomedical Engineering, Ohio State University, Columbus, OH, USA*  
(6) *Computer Science and Engineering, Ohio State University, Columbus, OH, USA*

**Purpose:** Although effective treatments for motor disability have been developed for the 325,000 people each year who experience hemiparesis post-stroke, these individuals are underserved by the current rehabilitation system. For example, constraint-induced movement therapy (CI therapy) is a “gold standard” therapy, yet less than 1% of those who could benefit are offered the opportunity to receive the treatment. To address this disparity, our research team developed a 3D gaming system (using Microsoft Kinect) to deliver CI therapy in individuals’ homes. Reported here are the results of a pilot study testing the feasibility and initial efficacy of an in-home gaming model of CI therapy.

**Methods:** Two participants were instructed to play the game for a target 30 hours over the course of two weeks and received five one-hour consultation sessions with a therapist. Consistent with traditional CI therapy, participants wore a mitt on the less affected hand for approximately 10 hours per day to promote use of the more affected hand for daily activities.

**Results:** Participants played for 21.37 hours and 33.15 hours, respectively, totaling 24,467 and 61,147 movement repetitions. Participants showed clinically meaningful improvements on a highly standardized test of speed of movement (change in Wolf Motor Function Test rate metric = 5.50 and 11.71).

**Conclusion:** This research provides strong evidence of feasibility and preliminary evidence of efficacy of an in-home gaming delivery model of CI therapy. This work could provide an engaging platform for addressing many of the barriers to quality upper extremity rehabilitation post-stroke.

**Contact:** Jana Jaffe, jaffe.51@osu.edu

#### P04.37

##### **Pregnant Women’s Use of Complementary & Alternative Medicine in the United States**

Selma Holden (1), Roger Davis (1), Gloria Yeh (1)

*Beth Israel Deaconess Medical Center, Boston, MA, USA*

**Purpose:** Pregnancy is a unique time in life where women can be motivated to make healthy lifestyle changes. At the same time, these women and their developing babies may be in a more vulnerable state. Complementary and alternative medicine (CAM) modalities may be particularly attractive to this population due to the perceptions that these therapies are safer due to their natural or holistic origins. Surprisingly, little is known regarding national estimates of CAM use in pregnancy.

**Methods:** We utilized the 2012 National Health Interview Survey (NHIS), a nationally-representative survey of the U.S. civilian adult population to examine CAM use during pregnancy. Descriptive statistics were used to estimate weighted prevalence and patterns of CAM use among pregnant women, including top modalities, reasons for use, patterns of disclosure to conventional providers, and perceived helpfulness. Comparisons are made with non-pregnant respondents of childbearing age.

**Results:** Of the 10,002 respondents who were women of childbearing age, 7% (n=727) were currently pregnant or pregnant during the year previous to the survey. 35% of the pregnant women had used one or more CAM therapies in the

previous year (compared to 37% in non-pregnant women,  $p > 0.05$ ). The top three most commonly used modalities in pregnancy were non-vitamin/mineral supplements (14%), yoga (13%) and massage (11%). Use of non-vitamin/mineral supplements was significantly less common than in non-pregnant women ( $p = 0.02$ ). 30% of the pregnant CAM users disclosed their use of CAM to their primary providers.

**Conclusion:** CAM use in pregnancy is common, with a third of the population using one or more therapy, mirroring CAM use in non-pregnant women of childbearing age. Only one third disclosed their use to conventional providers. Given the relative paucity of safety and efficacy data for specific therapies in pregnancy, this study highlights the important need for further research in this area as well as education of patients and providers.

**Contact:** Selma Holden, sholden@bidmc.harvard.edu

#### P04.38

##### **A Whole System Approach to Caring for Chronic Disease Patients in Primary Care: A Six Month Mindfulness-Based Therapeutic Lifestyle Change Program**

Cathy Snapp (1), Ruth DeBusk (1), Rita Benn (2)

(1) *Tallahassee Memorial Healthcare Family Medicine Residency Program, Tallahassee, FL, USA*

(2) *University of Michigan Family Medicine Residency Program, Ann Arbor, MI, USA*

**Purpose:** Chronic disease is steadily escalating and projected to dominate healthcare in the next decade. With the rise in chronic disorders is the concomitant burden on providers who have insufficient time and training to deliver appropriate care to this population.

**Methods:** The Tallahassee Family Medicine Residency Program (FMRP) has taken an innovative inter-professional, whole systems approach to meeting both patient and provider needs by developing a 24-week group-based Mindfulness-based Therapeutic Lifestyle Change (MBTLC) program for patients with chronic disease. This program is readily exportable to other residencies and community-based organizations. The program addresses evidence-based domains of health and lifestyle that are modifiable by patient choice: nutrition, movement/rest, stress management, and relationships. Weekly 2.5-hour instruction addresses these areas, co-facilitated by a psychologist, dietitian, and yoga instructor). Daily homework as well as participation in bi-weekly individual visits with an acupuncturist are additional program components.

**Results:** Preliminary data on patient outcomes were collected with 29 enrolled patients. Multiple parameters were assessed at baseline, 3 and 6 months: anthropometrics, inflammatory and metabolic biomarkers and medication use as well as quality-of-life (SF-12) and mindfulness (FFMQ) measurements. Over 75% of patients completed the program. Significant differences were evident from baseline to program completion on the majority of outcomes.

**Conclusion:** The highly successful pilot project is a living laboratory of patients and primary care physicians, with the goal of effectively managing and preventing chronic disease and training physicians in these approaches. The residents’ curriculum has a physician wellness component in which they learn the knowledge and skills taught in the MBTLC patient education program. Throughout the 3 years, residents learn to maintain

their own health so they can care appropriately for their patients and enjoy a long career in primary care and avoid burn-out. This presentation will address program results, curriculum, lessons learned, and resources needed for implementation in other settings.  
**Contact:** Cathy Snapp, cathy.snapp@tmh.org

#### P04.39

##### Use of Meditation and Breathing Exercises in Mind-Body Exercise in the U.S.

Sara A. Chacko (1), Christina C. Wee (1), Roger B. Davis (1), Gloria Y. Yeh (1)

(1) Beth Israel Deaconess Medical Center and Harvard Medical School, Brookline, MA, USA

**Purpose:** In traditional thought, meditation and attention to breathing are inherent and fundamental components of mind-body exercise. However, in the U.S. mind-body practices such as yoga, tai chi, and qigong are particularly heterogeneous and do not uniformly incorporate these practices. The extent to which meditation or breathing exercises are incorporated into mind-body exercise in the U.S. has not been studied.

**Methods:** We examined data from the 2012 National Health Interview Survey (NHIS) (n=34,525), a nationally representative survey of the civilian, non-institutionalized U.S. population, to estimate the prevalence and patterns of use of meditation and breathing exercises as part of 3 mind-body practices: yoga, tai chi and qigong. We weighted estimates to reflect the complex sampling design using SAS.

**Results:** Approximately 10% of the U.S. population (n=3,205) reported practicing mind-body exercise in the last 12 months. Compared to non-practitioners, practitioners were more likely to be women (72% vs. 50% male), younger (mean age: 40 vs. 47) and have a lower BMI (27 vs. 31). A large proportion of mind-body practitioners reported they do not incorporate meditation (43% of yoga users; 48% of tai chi users; 38% of qi gong users) into practice. A smaller proportion reported they do not incorporate breathing exercises (10% of yoga users; 16% of tai chi users; 11% of qigong users).

**Conclusion:** Mind-body exercise practice in the U.S. population differs from traditional teachings that emphasize meditation and breathing. These findings have implications for future research including interpretation and translation of studies of mind-body exercise, investigations of “active” components, and design of pragmatic trials in real-world settings. When constructing health messages, integrative medicine researchers should be aware that mind-body exercise interventions shown to be effective for health outcomes in research settings may differ from the way these exercises are practiced by the U.S. population.

**Contact:** Sara Chacko, sachacko@bidmc.harvard.edu

#### P04.40

##### Complementary and Alternative Medicine Practice Patterns for MD and DO, 2006–2010

Steve Chamberlin (1), Kim Tippens (1)

(1) Helfgott Research Institute, Portland, OR, USA

**Purpose:** To characterize practice patterns of MDs and DOs reporting the use of complementary and alternative medicine

(CAM) based on the National Ambulatory Health Care Survey (NAMCS) results.

**Methods:** Five years of the NAMCS data were used, 2006–2010. This visit level survey identifies the use of CAM during a visit. From this three groups were created, visits that used CAM, visits to physicians that used CAM on other visits, and visits to physicians that never used CAM. Comparisons were made for demographics, screening exams, health education, diagnoses and conditions, medication use and methods of payment. Analyses were done using the weighted data to represent US population trends.

**Results:** There were 154,421 visit surveys analyzed from the years 2006 to 2010 representing, when weighted, approximately 4.9 billion ambulatory physician visits in the United States. About .63% of the visits included the use of CAM (CC), 4.9% of the visits were to physicians that used CAM on other visits but not the current visit (CNC), and the remaining 94.5% of the visits were to physicians that never used CAM (NC). For the CC group there were more musculoskeletal complaints (33% vs 10% and 8% for CNC and NC), there were about twice as many previous visits in the last 12 compared to the NC group, physicians spent a few more minutes with patients compared to both CNC and NC groups, they had less acute and preventative visits but more chronic, especially chronic flare ups, they gave about twice as much health education as the other two groups, ordered less new medication and had a higher percentage of DOs.

**Conclusion:** Physicians using the CAM during their visits appear to rely less on medication and more on health education and greater visit frequency.

**Contact:** Steve Chamberlin, s.chamberlin@comcast.net

#### P04.41

##### Complementary and Alternative Medicine (CAM) Use During Cancer Treatment at a Comprehensive Cancer Center

Qianlai Luo (1), Gary Asher (1)

(1) University of North Carolina, Chapel Hill, NC, USA

**Purpose:** We sought to define CAM use before and during active cancer treatment and investigate factors that might influence changes in CAM use for cancer patients.

**Methods:** We conducted a cross-sectional survey of adults diagnosed with breast, prostate, lung, or colorectal cancer between 2010–2012 at the UNC Comprehensive Cancer Center. An introductory letter, questionnaire, and return-postage envelope was sent to 1794 patients. Phone calls were made to non-respondents followed by resending the questionnaire. Logistic regression was used to investigate the association between CAM use and discussion of CAM use with an oncologist.

**Results:** We received 597 (33.3%) completed questionnaires. The mean age (SD) was 64 years ( $\pm 11$ ); 62% were female; 79% were white; and 98% were non-Hispanic. Respondents reported the following cancer types: breast (47%), prostate (27%), colorectal (15%), lung (11%). Ninety-one percent reported any CAM use with category-specific use as follows: mind-body medicine (MBM-46%), dietary supplements (DS-83%), body-based therapies (BBT-39%), energy medicine (EM-52%). CAM use decreased during cancer treatment compared to use prior to treatment for all categories (MBM 9%, DS 17%, BBT 38% decreases) except energy medicine (8% increase). Specific therapies responsible for the changes in CAM use included: acupuncture or yoga (43% decrease), vitamins (19% decrease),