



Measuring Our Impact:

A Summary of Publications and Research on The Center for Mind-Body Medicine's Clinical Interventions & Trainings

Research Overview

Papers in peer-reviewed, scientific journals document the efficacy of The Center for Mind-Body Medicine's (CMBM's) model for interventions in population-wide trauma, stress, and anxiety relief with children, adolescents, and adults alike, across a diversity of populations, geographies, and conditions. Similarly, studies currently in preparation for publication demonstrate impacts where the CMBM training and clinical intervention models have been facilitated by qualified personnel.

In 2008 for example, CMBM published the first-ever randomized controlled trial of *any* intervention with war-traumatized children; in numerous subsequent studies, the community- and institution-based application of our model by CMBM-trained practitioners has consistently **reduced the percentage of participants who qualify as having Posttraumatic Stress Disorder (PTSD) by 80% or more**, with gains holding at 3- and 10-month follow ups. Similarly, published research documents the efficacy of CMBM's training program with healthcare providers and medical students. These studies show **statistically significant decreases in practitioner burnout, secondary traumatic stress, anxiety, perceived stress, and personal distress as well as improvement in empathic concern**. In one study, medical students in a CMBM Mind-Body Skills Group did not have the same exam-time increases in stress hormones as a comparison group. Overall and consistently, research demonstrates **statistically significant decreases in depression, hopelessness, anxiety, anger, and sleep disturbance, and increases in mindfulness, self-efficacy, and quality of life** among both children and adults experiencing trauma, using the CMBM model for the relief of trauma, stress, and other factors that inform population-wide mental health.

Inspired by the goal to "train thousands to heal millions," for over thirty years CMBM has collaborated with community leaders worldwide to deliver evidence-based trauma relief trainings and clinical programs that, because they are ultimately replicated and led at the local level by CMBM-certified members of each community, are also sustained by authentic relevance to and integration with the community's unique experiences, needs, goals, and values. In these ways and as is documented in published research, CMBM has proven uniquely capable of building the capacity of local communities to inform and sustain trauma relief and well-being among populations as diverse as military veterans, survivors of both population and personal violence, economically and politically marginalized groups, and many others where population-wide mental health challenges are present.

First developed by CMBM Founder & CEO Dr. Jim Gordon in 1991, CMBM's Clinical Intervention Model teaches participants who have experienced population-wide trauma a specific, evidence-based set of stress-relief and resilience-building skills. These skills are taught in expert-facilitated small group settings in which structured shared learning and mutual support are as integral to both individual and program success, as are the actual skills. The mind-body medicine techniques include meditation, guided imagery, yoga and exercise, biofeedback, and self-expression techniques with words, drawings, and movement. By learning, co-experiencing, and convening to discuss the effects of the mind-body techniques, participants develop the effective and easy-to-use toolkits they need face, regulate, and calm stress and the impacts of trauma and, importantly, do so within the pro-social, life-affirming context of community and shared experience.

The CMBM Training program introduces the CMBM Clinical Intervention model to mental and general health care clinicians, social workers, educators, clergy, and other community leaders and professionals interested in delivering CMBM's clinical intervention model to their own communities and institutions. More than 150 highly-trained members of CMBM's global faculty provide ongoing support and supervision as trainees become practitioners who successfully integrate our model into their work with children and adults in hospitals, clinics, schools, social service agencies, businesses and a plethora of other institutional and community settings.

Catalog of Publications and Research

Research documenting the impact of CMBM's training and clinical intervention models with specific populations includes:

War-Traumatized Children and Adults

Veterans of the U.S. Armed Forces

- Staples JK, Gordon JS, Hamilton M, Uddo M. Mind-body skills groups for treatment of war-traumatized veterans: A randomized controlled study [published online ahead of print, 2020 Mar 5]. *Psychol Trauma*. 2020;10.1037/tra0000559.
 - Randomized controlled trial demonstrated significant reduction in overall PTSD symptoms and significant improvements in anger and sleep disturbance.

High School students in Kosovo

- Gordon JS, Staples JK, Blyta A, Bytyqi M, Wilson AT. Treatment of posttraumatic stress disorder in postwar Kosovar adolescents using mind-body skills groups: a randomized controlled trial. *J Clin Psychiatry*. 2008; 69(9):1469-1476.
 - Randomized controlled study demonstrated 82% reduction in adolescents who qualified as having PTSD. The reduction in PTSD symptoms was maintained at 3-month follow-up. This was the first RCT of any intervention with war-traumatized adolescents. The groups were led by rural high school teachers whose only training in psychology was provided by CMBM.
- Gordon JS, Staples JK, Blyta A, Bytyqi M. Treatment of posttraumatic stress disorder in postwar Kosovo high school students using mind-body skills groups: a pilot study. *J Trauma Stress*. 2004;17(2):143-147.

- This pilot study demonstrated a significant improvement in PTSD scores in rural high school students who participated in mind-body skills groups led by teachers.

Children and Adults in Gaza

- Staples JK, Abdel Atti JA, Gordon JS. Mind-body skills groups for posttraumatic stress disorder and depression symptoms in Palestinian children and adolescents in Gaza. *Int J Stress Manag.* 2011; 18(3): 246-262.
 - Study demonstrated 91% reduction in participants who qualified as having PTSD and significant decreases in depression and hopelessness. Reductions in hopelessness were fully maintained and reductions in PTSD and depression were largely maintained at 7-month follow-up.
- Gordon JS, Staples JK, He DY, Abdel Atti JA. Mind-body skills groups for posttraumatic stress disorder in Palestinian adults in Gaza. *Traumatology.* 2016: 22(3) 155-164.
 - Study demonstrated 86% reduction in adult participants who qualified as having PTSD and significant improvements in depression, anxiety, and quality of life. All improvements were fully maintained at 10-month follow-up.
- Currently being prepared for publication is a study of our work with a boys school in Gaza, which indicates significantly decreased hyperactivity, physical aggression, and increased prosocial behavior 10 months after the Mind-Body Skills Groups compared to the control group.

Children and Adolescents Facing Poverty, Health Injustice, and Other Trauma

US Adolescents with Depression, in Primary Care Settings

- Aalsma, MC, Jones LD, Staples, JK, Garabrant JM, Gordon, JS, Richtsmeier Cyr L, Sagado EF Salyers, MP. Mind-body skills groups for adolescents with depression in primary care: a pilot study. *J Pediatr Health Care.* 2020;34(5):462-469.
 - This study examines the impact of our work with adolescents with clinical depression and demonstrates significant improvement in depression symptoms, mindfulness and self-efficacy, and decreased rumination and suicidal ideation. The depression symptoms continued to significantly improve at 3-month follow-up while improvement in mindfulness, self-efficacy, rumination, and suicidal ideation were maintained at follow-up.
- Cunningham LD, Aalsma MC, Salgado EF, Garabrant JM, Staples JK, Gordon JS, Salyers, MP. (2021). Do adolescents consider mind-body skills groups an acceptable treatment for depression: A pilot study. *BMC Pediatrics.* 2021; 21(1): 475.
 - This was a qualitative evaluation of the Aalsma et al study (above) with depressed adolescents. Thirty-nine adolescents were interviewed at post-intervention and 3-month follow-up to understand their perspectives on the acceptability and effectiveness of the Mind-Body Skills Group treatment. At post-intervention and follow-up, 84% of adolescents stated the MBSGs helped

them. The areas that were helpful were: learning new MBSG activities and skills, and social connection with others within the group. Most adolescents reported that their life had changed because of the group (72% at post-intervention; 61% at follow-up), and when asked how, common responses included feeling less isolated and more hopeful.

US Adolescents with Chronic Illness

- Cyr, LR, Farrah, K. Mind-Body Skills Groups for adolescents. *Biofeedback*. 2005; 33(2):63-68.
 - This paper describes the Mind-Body Skills Group model and reviews its use for US adolescents with chronic illness. A case study is presented showing improvement in functioning for a teenager with chronic pain and sleep disturbance.

High School Peer Counselors Working to Address School Violence

- Staples JK, Zapata S, Fredrickson M, Quinn H, Richtsmeier Cyr L, Gavian, ME, Rountree LK, Gordon, JS. A mind-body medicine curriculum for student peer counselors following a school shooting: A qualitative study. *Psychol Sch.* (under review - February 2022)
 - This qualitative study investigated high school student peer counselors' experience of a mind-body medicine curriculum incorporated into a peer counseling program following a school shooting. A series of focus groups were held with 24 peer counselors in 10th –12th grade participating in the mind-body medicine curriculum. The mind-body medicine curriculum decreased the peer counselors' stress and helped them regulate their emotions. Other interview themes included increased resilience and self-confidence, working harder for their goals, and choosing supportive friends. The main themes related to their peer counseling work were that the mind-body skills would help them be less reactive and more patient with other students and that the skills would be helpful for these students. This study has important implications for practitioners in the schools because the mind-body medicine curriculum can effectively complement the communication and decision-making skills taught in peer counseling programs.
- Currently being prepared for publication is a second study of our training of Peer Counselors at Marjory Stoneman Douglas High School, following the now-infamous deadly school shooting there in 2018. Our study demonstrates significantly decreased anxiety and improved self-regulation, and pathways thinking (ability to develop the specific strategies to reach defined goals) following the year-long training.

CMBM Training of Healthcare Professionals

- Weinlander EE, Gaza EJ, Winget M. Impact of mind-body medicine professional skills training on healthcare professional burnout. *Glob Adv Health Med.* 2020;9:2164956120906396.
 - Study demonstrated significant improvement in three areas of burnout: emotional exhaustion, depersonalization, personal accomplishment. There was also significant improvement in professional quality of life including compassion

satisfaction (satisfaction with work), and secondary traumatic stress. All improvements were sustained at 12 months.

- Staples JK, Gordon JS. Effectiveness of a mind-body skills training program for healthcare professionals. *Altern Ther Health Med*. 2005; 11(4):36-41.
 - Study demonstrated significant increases in well-being, personal use of mind-body skills, and use of all modalities with clients.
- Staples JK, Wilson AT, Pierce B, Gordon JS. Effectiveness of CancerGuides; a study of an integrative cancer care training program for health professionals. *Integr Cancer Ther*. 2007;6(1):14-24. doi:10.1177/1534735406298145.
 - Study demonstrates that immediately following the training participants experienced reduction in Anger-Hostility and Tension-Anxiety as measured by the Profile of Mood States. Six months after the training, there was a significant increase in the use and/or recommendation of complementary and alternative medicine modalities in clinical practice. Participants also reported positive change in their patient care and in their clinical practices.
- Currently being prepared for publication is a study of CMBM's Wellness Training for Eskenazi Health's Midtown Community Mental Health Staff. A variety of outcomes were measured after the CMBM training program and again at 3-month follow-up. Immediately after the program perceived stress and stress management were significantly increased with gains maintained at 3-month follow-up. Three months after the CMBM program there was also a significant decrease in secondary traumatic stress, and an increase in the following health promoting lifestyles/behaviors: nutrition, spiritual growth, interpersonal relations, and health responsibility. Qualitative results at follow-up showed that participants were using the tools both personally and professionally, that they placed a higher priority on self-care, and that they had more balance in their lives.

CMBM's Mind-Body Skills Groups with Medical and Nursing Students, Psychiatric Residents and Medical School Faculty

- Gordon JS. Mind-body skills groups for medical students: reducing stress, enhancing commitment, and promoting patient-centered care. *BMC Med Educ*. 2014;14:198. Published 2014 Sep 22. doi:10.1186/1472-6920-14-198.
 - This paper summarizes the use of Mind-Body Skills Groups (MBSGs) with medical students led by CMBM-trained faculty at 15 US medical schools. The author describes the model in detail and presents the results of a survey on its use in medical schools. He also summarizes published research on the use of the model with medical students, and discusses benefits as well as obstacles to successful implementation. The paper concludes that MBSGs have demonstrated effectiveness in reducing stress in medical students; in enhancing the students' experience of medical education; and in helping them look forward more confidently and hopefully to becoming physicians.

- Moir E, Yang JO, Yao J, Weinlander E. Do as I Do: Physician- and Learner-Led Mind-Body Medicine Group visits. *PRiMER*. 2021;5:4. Published 2021 Feb 1. doi:10.22454/PRiMER.2021.548093
 - This study evaluated physician-led mind-body skills groups for patients with chronic health conditions. There were significant improvements in depression, ability to cope with stress, and sense of control over their diagnosis.
- Ranjbar N, Erb M, Tomkins J, Taneja K, Villagomez A. Implementing a Mind-Body Skills Group in psychiatric residency training [published online ahead of print, 2021 Aug 2]. *Acad Psychiatry*. 2021;1-6.
 - This paper describes the evaluation of a 10-week Mind-Body Skills Group program offered to University of Arizona-Tucson psychiatric residents. Eighty-four percent of the residents were satisfied or very satisfied with the Mind-Body Skills Group. Eighty percent used skills learned in the course for their own self-care and 61% used the skills with patients on at least a weekly basis. Eighty-nine percent indicated they were likely or very likely to use mind-body skills with patients in the future. Ninety-five percent would strongly recommend or likely recommend the course to colleagues. Results for in-person and online groups were not significantly different.
- Williams MK, Estores IM, Merlo LJ. Promoting resilience in medicine: The effects of a mind-body medicine elective to improve medical student well-being. *Glob Adv Health Med*. 2020;9:2164956120927367. Published 2020 May 21.
 - An evaluation of first and second-year medical students participating in an 11-week Mind-Body Medicine elective course showed that the greatest improvements were in mindfulness, relationships with peers, and having a safe place in medical school to receive support. Learning mindfulness/meditation skills and increasing social support were noted as the primary factors impacting student well-being.
- Barnhill JL, Gerkin JS, Moura VL, Weil AB. Mindful opportunity to reflect on experience: interdisciplinary mind-body medicine skills training for health-care professionals. *Glob Adv Health Med*. 2020;9:2164956120907876. Published 2020 Feb 14.
 - After participation in an 8-week mind-body skills group program, health professionals had a significant increase in their personal practice of biofeedback and guided imagery.
- Ranjbar N, Ricker M, Villagomez A. The Integrative Psychiatry Curriculum: development of an innovative model. *Glob Adv Health Med*. 2019;8:2164956119847118.
 - This paper describes the development of a required Integrative Psychiatry Curriculum (IPC) for all residents and fellows at the University of Arizona that began in 2015. The IPC includes Introduction to Integrative Medicine, Mind-Body Medicine, Physician Well-Being, Motivational Interviewing, Neural and Mental Health, Complementary Medicine, Dietary Supplements, Nutrition, and Special Topics. The Mind-Body Medicine component involves 10 weeks of Mind-Body Skills Groups (MBSGs). Responses to the MBSGs were very

positive across all years of the IPC. Participants noted that they adopted the mind–body techniques for their own selfcare and utilized the techniques in their patient encounters.

- van Vliet M, Jong MC, Jong M. A mind-body skills course among nursing and medical students: a pathway for an improved perception of self and the surrounding world. *Glob Qual Nurs Res*. 2018;5:2333393618805340.
 - In a qualitative study, Dutch medical students and Swedish nursing students reported the “ability to be more present,” “increased perception and awareness of self,” and “connection on a deeper level with others” after participating in a Mind-Body Medicine Skills course.
- van Vliet M, Jong M, Jong MC. Long-term benefits by a mind-body medicine skills course on perceived stress and empathy among medical and nursing students. *Med Teach*. 2017;39(7):710-719.
 - Twelve-month outcomes from a controlled study with Dutch medical students and Swedish nursing students showed the following: medical students had significantly increased empathic concern and fantasy and decreased personal distress; nursing students had significantly decreased levels of perceived stress and personal distress.
- Greeson JM, Toohey MJ, Pearce MJ. An adapted, four-week mind-body skills group for medical students: reducing stress, increasing mindfulness, and enhancing self-care. *Explore (NY)*. 2015;11(3):186-192
 - Mixed methods study demonstrates that there was a 32% decrease in perceived stress and a 16% increase in mindfulness after the 4 week mind-body skills course. Students also stated that the program helped them cope more skillfully with the stress and emotional challenges of medical school and helped increase self-care behaviors such as exercise, sleep and engaging in social support.
- Talisman N, Harazduk N, Rush C, Graves K, Haramati A. The impact of mind-body medicine facilitation on affirming and enhancing professional identity in health care professions faculty. *Acad Med*. 2015;90(6):780-784.
 - Study demonstrated that medical school faculty acting as facilitators of Mind-Body Skills Groups experienced decreased stress and increased mindfulness. Facilitators also reported better self-confidence, communication, connection with community, empathy, active listening, and self-care.
- Maclaughlin BW, Wang D, Noone A-M, et al. Stress biomarkers in medical students participating in a mind body medicine skills program. *Evid Based Complement Alternat Med*. 2011;2011:950461-950461.
 - Controlled study demonstrates the 11-week mind-body skills groups helped medical students maintain normal levels of stress hormones during final exams compared to students who did not attend the course.

- Finkelstein C, Brownstein A, Scott C, Lan YL. Anxiety and stress reduction in medical education: an intervention. *Med Educ*. 2007;41(3):258-264. doi:10.1111/j.1365-2929.2007.02685.x
 - In this controlled study, medical students participating in a Mind-Body Medicine elective had higher initial anxiety before the course than non-participating students. Anxiety in the Mind-Body Medicine participants declined significantly during the course. After the course, anxiety levels in participating students were the same as the control group. Decreased anxiety levels were sustained for 3 months following the conclusion of the course.

- Saunders PA, Tractenberg RE, Chaterji R, et al. Promoting self-awareness and reflection through an experiential mind-body skills course for first year medical students. *Med Teach*. 2007;29(8):778-784.
 - In a qualitative study, students reported increased connectedness, self-discovery and stress relief after the 4-week mind-body skills workshop.