



Consciousness & Healing



by Vesela Simic

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THE TIME IS RIPE FOR A PARADIGM SHIFT IN U.S. health care. The public has long recognized the need for change, and now with the Obama Administration at the helm, government promises to be more receptive to serious and progressive reform. In late February, the U.S. Senate Committee on Health, Education, Labor, and Pensions held a hearing called “Integrative Medicine: A Pathway to a Healthier Nation,” cochaired by longtime advocate for integrative health care Senator Tom Harkin and by Senator Barbara Mikulski. Like President Obama, Harkin recognizes the importance of prevention in improving public health and cutting costs; he called the

Evidence Adds Up to a Health Care Revolution

Senate subcommittee meeting to ensure an ongoing dialogue about alternative medicine as a viable complement to expensive conventional medical practices.

Just days later, Senator Harkin also attended the Summit on Integrative Medicine and the Health of the Public, hosted by the Institute of Medicine (IOM) and the Bravewell Collaborative. Leading scientists and clinicians, policy experts, and health care providers gathered to discuss the role integrative medicine must play in response to the current health care system, “which anybody would agree is facing a tremendous crisis,” said Ralph Snyderman, summit chair and chancellor emeritus of Duke University School of Medicine. At the summit, Harkin pledged, “It is my intention to change our health system and to place integrative health care at the heart

of the reform legislation we will pass this year.” Judy Salerno, executive director of the IOM, echoed Harkin when she declared, “We intend to broadly share ideas expressed at this Summit . . . our key audiences are the Obama Administration and the Department of Health and Human Services.”

Factors critical to health care reform were identified at the Summit and include the following:

- *The new system must focus on prevention and wellness and put the patient at the center of care.*
- *Lifestyle-modification programs have been proven not only to improve people’s overall health and well-being but also to mitigate and sometimes completely heal chronic diseases.*
- *Genetics is not destiny: Recent research shows that gene expression can be turned on or off by nutritional choices, levels of social support, and stress-reduction activities such as meditation and exercise.*
- *All health care practitioners should be educated in the importance of compassionate care that addresses the biopsychosocial dimensions of health.*
- *Evidence-based medicine—which emphasizes the need for research and testing that expand the evidence for integrative models of care—is the only acceptable standard.*

“Integrative medicine” is the term being used these days to refer to the full range of physical, psychological, social, preventive, and therapeutic factors that support optimal health. It made an important inroad into the medical establishment in 1992 when the National Center for Complementary and Alternative Medicine (NCCAM) was founded. Research in the field has steadily grown, producing an increasingly strong body of evidence that supports the efficacy of complementary and alternative practices. It’s important to note, however, that while some of these studies have been funded by NCCAM and the National Cancer Institute, many more have been funded by private foundations and donors. Those scientists committed to research outside mainstream medicine have had to learn to solicit funding as diligently and skillfully as they employ the scientific method. And the

resources available to them still cannot compare to the support scientists working within the conventional medical model receive: The *Washington Post* recently reported that the National Institutes of Health's entire alternative medicine portfolio is \$300 million a year out of a total budget of \$29 billion—that's barely one percent.

In light of this paucity of funding, researchers intent on studying integrative healing approaches are to be commended for their commitment, resourcefulness, and creativity. Advances in genomics and in technologies such as magnetic resonance imaging are also providing these scientists with more sophisticated and effective means to measure the outcomes of alternative therapeutic approaches. We can get a snapshot of all these factors at play—the impact of funding, research designs and tools, and investigators' ingenuity—by looking at three different studies that gather data on complementary and alternative therapies: IONS' Integral Transformative Practice Study, the Shamatha Project, and a study at Stanford University of three different treatments for social anxiety disorder.

IONS' Integral Transformative Practice Study

Since the Institute of Noetic Sciences (IONS) was founded in 1973, its researchers have been studying how consciousness transforms in positive ways, understanding that “the more we learn, the more we'll be able to foster transformation in individuals, communities, institutions, and the world.” Among the many studies undertaken at IONS throughout the years, a recently completed one on the effects of Integral Transformative Practice (ITP) illustrates not only the benefits of this particular wellness program but also how effective researchers can be at designing studies that accommodate modest funding for their frontier work.

With funding from the Fetzer Institute, researchers Marilyn Mandala Schlitz, Cassandra Vieten, and Adam Cohen recruited 53 participants from ITP groups across the country for an exploratory investigation of the practice's effects. ITP is a systematic daily practice intended to facilitate health and well-being at every level—physical, emotional, mental, and spiritual. The practice grew out of Michael Murphy and George Leonard's work in the human potential movement at Esalen.

ITP study participants were asked to engage in as many components of the practice as they could:

- *the “kata” (a sequence of rotations, stretches, twists, contractions, and relaxations drawn from hatha yoga, martial arts, exercise physiology, relaxation and visualization research, and witness meditation)*
- *aerobic exercise*
- *affirmations*
- *conscious eating*
- *ITP group meetings*
- *reading, writing, and discussion related to ITP*
- *service to the ITP community*
- *service outside the ITP community*

Participants were required to respond to in-depth online questionnaires at three different times during the course of this yearlong study—at the outset, six months later, and when the year had ended. They were also asked to have someone they trusted and with whom they have frequent contact make their own observations to reduce the inherent inaccuracy of self-reporting. The online questionnaires were based on IONS researchers' theoretical model of change (see p. 33) as well as input from ITP leaders with expertise in this practice. Study participants brought different levels of experience with ITP to this investigation: Half were in their first or second year, 13 percent had been practicing ITP for three years, another 10 percent for four years, and the rest for more than four years.

The study ended in 2008, and though statistical analyses were still under way at the time of this article's writing, preliminary results show reduced symptoms of ill health and improvements in well-being and quality of life. At the beginning of the study, 18 percent of the group reported “excellent health”; by the end of the year's practice, that figure had doubled. When asked if they felt tired, worn out, or exhausted, 53 percent reported “little” or “none” at the outset, while 82 percent reported “little” or “none” by the end of the year. Initially, 61 percent said they hardly ever experience a runny or congested nose; by the end of the study, 80 percent responded this way. And while 27 percent reported no experience of depression at the outset, that number rose to 43 percent by the end of the year. In short, preliminary results show a pattern

of improvement across all measures of health and well-being. Also noteworthy: More frequent practice correlated with higher levels of improvement.

This fiscally economical study produced enough compelling evidence for researchers to extend their investigation into a yearlong new study. Collaborating with California Pacific Medical Center's Research Institute, they will use similar methods to explore how engagement in one of three different spiritual practice groups (Centering Prayer, Nondual Meditation, and Religious Science) affects health and well-being.



SHAMATHA PROJECT

The Shamatha Project

Many studies on the effects of meditation as mental medicine have been and continue to be conducted, and among those recently completed is the Shamatha Project. Shamatha is an ancient Buddhist meditation technique that develops exceptional levels of attention and focus, which are considered the prerequisite for learning to regulate emotions. Learning to regulate our emotions, of course, means acquiring the skill to reduce the deleterious effects of negative emotions on health and well-being. Shamatha helps practitioners cultivate the beneficial emotions of equanimity, empathy, compassion, and loving-kindness. Like ITP, Shamatha is a transformative practice that facilitates positive change.

With more funding and resources than were available to the ITP investigators, Shamatha investigators B. Alan Wallace, of the Santa Barbara Institute for Consciousness Studies, and Clifford Saron, of the Center for Mind and Brain at the University of

California–Davis, led a larger research team in a more intensive effort. The Shamatha Project followed 64 trainees, randomly divided into two groups, in two three-month, full-time meditation retreats at the Shambhala Mountain Center in Colorado. During the first retreat, one group practiced Shamatha meditation for eight to ten hours a day, while the other group served as a wait-list control group. During the second retreat, the control group joined the other group for another three months of full-time meditation practice.

All participants completed identical questionnaire packets at the beginning and end of the retreat periods; these measured such psychological adaptive traits as mindfulness, empathy, openness to experience, and well-being, as well as maladaptive traits such as depression, general anxiety, and difficulties regulating emotions. The trainees also kept diaries, which were studied against quantitative, objective measurements such as brain activity using electroencephalography and autonomic nervous system activity via heart rate, skin conductance, and respiration. Researchers monitored all participants throughout the retreats for emotion regulation, attention, stress-related hormones, and immune system factors.

Trainees' performances on computer-based tests of visual perception and concentration allowed investigators to assess improvements in attention skills. To detect subtle changes in emotional experience, researchers devised a film-viewing task for the trainees. After watching film segments with graphic scenes of human suffering, participants were shown a storyboard of individual frames from the film to help them remember when in the film they experienced changes in emotion. Using a measurement known as the Facial Action Coding System (FACS), researchers are still evaluating these self-reports against recordings of participants' facial expressions while viewing the film. They are also identifying the neural correlates of meditation-related changes in attention and socioemotional abilities. All this work has been funded by, once again, the Fetzer Institute, as well as the Hershey Family Foundation, the Yoga Research and Education Fund, the Mental Insight Foundation, and the Chade-Tang Foundation.

Although the second meditation retreat ended in 2007 and the large amount of data continues to be

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analyzed, preliminary results confirm the beneficial effects of Shamatha meditation. For example, after the first retreat, trainees showed better adaptive functioning (enhanced mindfulness, ego resilience, empathy, and psychological well-being) than the control group. Once the control group participated in the meditation retreat, its members likewise showed improvements in adaptive functioning. The first retreat group also showed improvement in attention skills compared with the control group, whose members showed similar improvements when they underwent training in the second retreat. As for whether Shamatha enhances compassion, early analyses show that it does. After viewing scenes of the Iraq war in which American soldiers brag about getting psyched up to shoot Iraqis by listening to heavy metal music, followed by images of suffering Iraqi children and adults, the first retreat group reported significantly less contempt for the soldiers than did the control group. Thus far, then, results from the Shamatha Project affirm the anticipated benefits of greater attention control: increased abilities to regulate emotions and to apply prosocial values—which reduce the harmful effects of negative emotions on health and well-being.

Three Treatments for Social Anxiety Disorder

In a still more ambitious and costlier study at Stanford University that is being partially funded by the NIH and the NCCAM as well as by the Mind and Life Institute, lead researchers Philippe Goldin and James Gross are using the latest neuropsychological tools to study the clinical effects of different psychosocial treatments for social

anxiety disorder. Now in its third year, this five-year study is examining the effects of cognitive behavioral therapy (CBT), mindfulness-based stress reduction (MBSR, a meditation practice), and physical fitness/aerobic exercise on adults struggling with social anxiety. The study also aims to

- identify how each type of treatment influences underlying brain mechanisms related to emotional reactivity, emotion regulation, and self-view;
- identify psychological and neural markers at baseline to determine who will benefit from what type of training (treatment matching);
- explore what psychological and neural variables predict who will maintain treatment gains and who will relapse post treatment.

To date, approximately one hundred adults with social anxiety disorder and thirty “nonanxious” adults have participated in the study. All participants first complete a comprehensive battery of assessments. These include self-report questionnaires; clinical diagnostic interviews; computer tasks that assess attention, self-view, and implicit associations; behavioral tasks that measure social performance; fMRI to map emotion regulation; saliva sampling to analyze cortisol levels; and genotyping to examine specific genes involved in personality features and psychopathology. When all that has been completed, participants pick a number to randomly assign themselves to one of the three types of treatment.


Cognitive behavioral therapy involves understanding the nature of social anxiety and becoming aware of the thoughts, actions, choices, and bodily sensations

related to the disorder. Individuals learn to develop more adaptive, realistic, and helpful ways of thinking and acting. During the study, participants receive one-hour, one-on-one CBT sessions once a week for 16 weeks. The mindfulness-based stress reduction program helps participants incorporate a meditation practice into their lifestyle. Participants learn to pay attention from moment to moment without judgment, which enhances their awareness and cultivates their acceptance of the present moment—its external events and their own internal thoughts, feelings, and sensations. Study participants learn MBSR in a group format, once a week for eight weeks. The wellness program helps participants adopt a steady routine of exercise and fitness activities. They meet individually with a coach, who tailors a program that includes a group fitness class. During all three treatments, researchers analyze rates of change in anxiety, avoidance, and emotion, and when the course of treatment has been completed, participants return to the lab to be reassessed on all the same measures taken at the outset. To monitor the longer-term impact of these treatments, follow-up evaluations continue every three months for another year.

This five-year study will not be completed until 2011. Thus far, results show that all three interventions reduce symptoms of social anxiety, state anxiety, and depression. CBT—which Goldin notes is the recognized gold standard of treatment for social anxiety—is providing the greatest reduction in social anxiety symptoms. MBSR shows the greatest reduction in depression symptoms. Both CBT and MBSR are improving the ability to regulate emotions—reducing experiential avoidance and decreasing emotional reactivity. Neuroimaging from pre- to post-treatment reveals that CBT and MBSR both increase activity in the areas of the brain associated with attention regulation and cognitive control. However, CBT increases activity in the brain’s processing of language, while MBSR does not. This seems to reflect the different dynamics of each approach: actively revising thoughts in cognitive behavioral therapy compared with simply noticing thoughts in mindfulness meditation. Both therapeutic approaches, though, provide relief from anxiety, making “treatment matching” (identifying who will benefit most from which treatment) an instructive and viable research goal.

Money Matters

Neuroimaging has become a powerful tool for researchers, bringing state-of-the-art reliability to the establishment of evidence that alternative and complementary therapies can work. As Goldin says, “We let the brain speak for itself.” The ITP Study, the Shamatha Project, and the investigations at Stanford illustrate the ingenuity of scientists who are studying these therapies, as well as the range of funding available—from modest to substantial—that makes their work possible. Greater funding helps to provide stronger and more reliable evidence, whether or not that evidence supports a particular practice. President Obama has said that more than \$1 billion would be devoted to evaluating outcomes of health and medical treatment programs so that what works can be identified. At the Senate subcommittee meeting on integrative medicine, Senator Mikulski said her goal was to uncover the “sound science” on alternative care. “Not only should medicine and health care be complementary,” she said, “but we need to begin to change the paradigm of health care.”

If research on integrative health practices were more generously funded and more were found to be effective, it would make it harder for the “stagnant quo”—as Senator Harkin refers to the status quo—to resist the evolution U.S. health care is poised to make. But as President Obama continues to remind us, reform will not happen unless we pressure our legislators to make it happen this year. 

Researchers at the Clinically Applied Affective Neuroscience Lab at Stanford University are still recruiting adults with social anxiety disorder for their treatment studies. For more information, contact them at 650-723-5977 or go to <http://waldron.stanford.edu/~caan/>.



VESELA SIMIC is senior editor of *Shift* magazine. After earning a master’s in English literature and literary criticism at the University of Chicago, she moved to the San Francisco Bay Area to teach. Before joining *IONS* four years ago, her work in publishing included editorial roles at *Yoga Journal*, *WestEd*, and *Conari Press*.