The author introduces the pathways model, a three-level approach for integrating self-directed lifestyle change, the acquisition of self-regulation skills, and the use of community resources into a comprehensive mind-body treatment approach. The pathways model is illustrated with a case study of a 34-year-old executive with public speaking anxiety. Mindfulness strategies are integrated into each phase of treatment for this individual, along with emotional journaling, participation in Toastmasters, and heart rate variability biofeedback.

Introduction: The Pathways Model

Infectious diseases, bacterial parasites, and unhealed physical trauma have largely been conquered. Today’s patients present with diseases of lifestyle, stress-related conditions, and chronic illnesses (Moss, McGrady, Davies, & Wickramasekera, 2003). Hypertension, depression, anxiety, diabetes, fibromyalgia, chronic fatigue, and chronic pain are typical problems today. Many common complaints in primary care are influenced by life stress, sedentary lifestyle, and poor dietary choices. The conditions may involve biomedical elements, but psychosocial factors cause medical conditions to worsen or improve.

Optimal approaches for stress-related and chronic conditions are lifestyle change and illness self-management. George and Thomas (2010) estimated that patients must provide 90% of their own care for diabetes. Unfortunately, less than half of medical patients consistently implement recommendations for self-care.

Experts in health and wellness promotion have identified a core of behavioral and lifestyle changes that diminish illness and enhance wellness. Smoking cessation, sleep hygiene, aerobic activity, moderation in alcohol, improved nutrition, and stress management are wellness practices that diminish the incidence of hypertension, diabetes, cardiovascular illness, and other medical/mental health problems. Yet society is losing ground on these variables. Sedentary lifestyles, avoidance of activity, poor nutrition, and weight gain are epidemic, with two thirds of the U.S. population qualifying as overweight and one third as obese (Thorpe, Florence, Howard, & Joski, 2004).

Despite negative trends, many seek pathways toward health and wellness in health food stores, or with Reiki energy healers, naturopaths, and other alternative practitioners, instead of conventional medical care. Further, patients often select behavioral and complementary and alternative medicine (CAM) therapies haphazardly, with little understanding of which therapies are better supported by research. Patients often do not disclose CAM therapies to their physicians, so treatment is not coordinated. A review of research in this area found that 50% of patients now use CAM care, and 77% of these patients do not disclose CAM use to medical practitioners (Robinson & McGrail, 2004).

In 2013, McGrady and Moss published the pathways model (in their book Pathways to Illness, Pathways to Health) to address the need for a comprehensive and coordinated approach to lifestyle change in medical and mental health patients. The pathways model provides a comprehensive approach to integrating lifestyle changes, CAM therapies, and self-regulation skills into health and wellness care. This model conceives of illness as a pathway from genetic predisposition, through diet and level of exercise, lifestyle choices, and life stress, culminating in medical conditions. Human beings who understand their role in illness creation, through past choices and lifestyle habits, better dedicate themselves to new pathways, wellness, and health.

The pathways model addresses the continuum of health and disease and the role of health risk behaviors and well behaviors in shaping health. The process begins with a Pathways Assessment, which explores the onset of health...
problems and negative behaviors and lifestyle factors contributing to the onset or continuance of health problems. In addition, the assessment explores readiness for change (Prochaska & Velicer, 1997). If the person cannot see change as possible and doubts that personal actions can make a difference in health, the best wellness plan will have little effect.

The pathways model advocates health coaching to assist individuals to gain a sense of self-efficacy, an inner conviction that “I can make changes in my behavior and they will make a difference in my health.” In addition, the pathways model advocates stepwise lifestyle change, beginning with small self-directed changes and proceeding to more demanding changes when the individual has experienced initial success.

McGrady and Moss (in press) are preparing a follow-up volume on Integrative Pathways, extending the pathways approach to chronic illness and chronic conditions and including CAM therapies and spiritual practices in an integrative pathways model.

The pathways model promotes a three-level, stepwise framework for personal changes in health-related lifestyle:

• Level 1 focuses on changes in behavior designed to reestablish normal body rhythms. Level 1 changes are self-directed and simple: The individual might use simple sleep hygiene principles to enhance quality and quantity of sleep, walk to a nearby park, or use calming music for self-soothing. Mindful breathing is a common and useful Level 1 intervention, integrating a quality of mindfulness with a simple breathing exercise.

• Level 2 focuses on learning self-regulation skills and using community resources and educational materials to support learning and lifestyle changes. The individual might use an educational CD to learn mindfulness meditation or attend a yoga class. Progressive relaxation, autogenic training, and mindfulness are basic self-regulation skills that can be mastered with the use of written handouts, educational CDs or DVDs, and community-based classes.

• Level 3 involves professional interventions, the use of services provided by a health practitioner, such as biofeedback, hypnosis, counseling, acupuncture, or mindfulness-based psychotherapy. The authors have found that patients benefit much more from professional services when a well-organized program of lifestyle changes and self-care practices is already under way. The patient participates more actively in the interventions planned by the professional, and the process of change is more sustainable.

This article presents a case that was treated following the pathways model, with mindfulness integrated at Levels 1, 2, and 3.

The Case of Jorge

Introducing Jorge

On evaluation, Jorge was a 34-year-old, single executive with public speaking anxiety. Jorge had been a high school and college athlete and remained physically fit. Jorge graduated from the respected Kendall School of Design with a B.A. and from Penn State with an M.B.A. He was hired by a Midwestern office furniture manufacturer. His initial advancement was rapid. Jorge’s work as a project manager drew accolades because he understood design and regularly contributed ideas for improving both aesthetics and functionality. He also was able to function as a liaison to sales and production because he had a keen sense of business process.

Referral

Jorge reported a recent loss of confidence when addressing groups at work. Jorge recalled some anxiety about speaking in high school. He took a public speaking class during college to help him organize his thoughts and speak more effectively. He developed skill in presentation through this class, but the anxiety and discomfort continued. On recent occasions, he found himself stammering and freezing up entirely. Jorge described experiencing an apprehension that others would “see” his discomfort, which would undermine his credibility.

Recently, his insecurity had grown more visible when addressing even two or three individuals. His administrator encouraged him to get help or lose opportunities within the company.

Pathways Assessment

Jorge showed good emotional health through much of his life. He reported supportive relationships with both parents and five brothers. He maintained regular contact with college friends and had just returned from a “boys’ weekend” with friends from Penn State. He was in a serious relationship and happy with the pace at which the relationship was developing.

Jorge denied incidences of anxiety in other areas of his life. Jorge described himself as ready to take steps on the performance anxiety about speaking in groups. On the Prochaska scale, he seemed at the “Preparation – ready to adopt change” and reported readiness to move into the “Action – doing it” stage.
Level 1
After introducing Jorge to the pathways model, he readily agreed to set self-directed goals as an initial step.

Level 1: Mindful breathing. Based on the benefits of breathing for relaxation and reducing anxiety, we initially assigned Jorge to practice paced mindful breathing for five minutes, as many times a day as he could. His instructions were as follows:

Allow your attention to dwell mindfully on your body and the process of your breathing. Allow your body to relax fully, especially the stomach and abdomen. Now, breathe evenly and slowly, concentrating on the diaphragm, and feeling your stomach rise as you inhale and fall as you exhale. Allow your abdominal muscles to relax more and more fully.

Each time you inhale, gently, slowly take in as much breath as possible. Pause for a moment, then slowly exhale. Exhale fully, emptying as much breath as possible. As you exhale, purse your lips to create a slight resistance to the flow of air, enhancing your awareness of the process of breathing. Should anything distract your breathing practice, simply accept it, notice it without judging, and draw your attention back to your breathing.

Level 1: Journaling. Jorge also agreed to keep a Pennebaker-style emotional journal. He was instructed to set aside 15–20 minutes each day and write without restraint about his thoughts and emotions about any situation that concerned him. He was advised to set aside concerns about grammar and correct writing and to let the words flow freely onto paper (Moss, 2005). He was also assured that although we would be happy to read his journal at his request, no one would see his writing without his consent.

James Pennebaker’s research shows that when individuals spend approximately 20 minutes daily writing freely about their deepest thoughts and feelings about some issue that has affected them and their life, many positive consequences follow (Pennebaker, 1997a, 1997b, 1999, 2002, 2004). Various studies applying this affective journaling protocol have shown that subjects display improved mood, increased feelings of well-being, enhanced immune function, and a host of other positive changes.

Level 1: Progress. Jorge enjoyed the mindful breathing practices and experienced a calming effect during his practice at home. He began using paced breathing in the office to calm himself before and during work group meetings. He discovered that he could take some slow breaths right in the middle of presenting an idea. He commented, “It is like my voice is slower and not so jittery after I breathe.” He also became more self-aware through breathing exercises, in a new and unaccustomed way.

Jorge initially didn’t like journaling. He wasn’t sure what to write and feared he wasn’t writing the right things. After some reassurance, he began writing about moments of fear in a high school English class and about his self-consciousness as a Latino in a mostly White school. He laughed in session and explained that he couldn’t believe that minority/ethnic-type issues might be contributing to his discomfort. He admitted that he had practiced mimicking anchormen as a teen to lose any trace of a Latino accent. Now he recognized that the old sensitivities were affecting his work performance.

Level 2

Level 2: Toastmasters. Jorge continued to use his Level 1 mindful breathing and to journal daily but was impatient to move ahead. He asked for Level 2 interventions.

Jorge initiated the suggestion of enrolling in Toastmasters, to practice talking in front of others. There was a Toastmasters’ meeting near his office, and he thought that talking in front of older “businessman types” there would simulate his stress in his own office. This was a perfect pathways Level 2 task because it came from an idea he had already considered for some time.

Level 2: Mindfulness. Jorge also agreed to learn mindfulness practices, by listening to an educational CD by Jon Kabat Zinn. Mindfulness involves cultivating the skill of bringing one’s entire attention to the present experience, by observing events unfold from moment to moment. In mindfulness, the individual suspends judgments and evaluations, accepting whatever arises in awareness. Jorge had already begun to experience mindfulness through his practice of mindful breathing and wished to deepen this process.

Level 2: Progress. Jorge enjoyed Toastmasters immensely. He felt less at stake in impressing the attendees there, and this freed him to be more playful and self-disclosing. He introduced himself in his first impromptu presentation as Jorge but added that his friends call him “Pancho.” In his second Toastmasters’ presentation, he wore a sombrero and momentarily adopted a thick accent, then he took off the hat and spoke more seriously in his anchorman voice. He also joked about nervousness, which dissipated his fear of
Integration of Mindfulness Training into a Pathways Model

Jorge enjoyed the concepts and approach of mindfulness. He found that slowing his breathing enhanced his ability to observe the moment without judging his actions. He combined mindful breathing and mindful observation with his Toastmasters presentations and found it calmed him further. His colleagues in Toastmasters’ told him that he was more effective when he paced his breathing and talked more slowly. They also advised him to use his sombrero at work to build his recognition in the company.

**Level 3 Therapies**

Jorge experienced such increased confidence in his speaking at work after his Level 1 and 2 experiences that he considered stopping treatment. We encouraged him to add one more breath-related practice and one more layer of mindfulness to his toolbox, to strengthen his confidence in having a strategy for any situation that could arise. Jorge agreed to commence heart rate variability (HRV) biofeedback to further strengthen his self-regulation skills. He also agreed to in-office mindfulness training, practicing mindfulness with his therapist, and setting mindfulness goals weekly.

**Level 3: HRV training.** After 10 weeks of daily practice of paced breathing from his Level 1 goal, Jorge already showed excellent breath control skills. He showed good ability to breathe with a pacer, at rates between 4.5 and 7.5 breaths per minute, and we guided him to adopt pursed lip breathing and to extend his exhalation until it was twice as long as his inhalation. Based on a five-minute sample, his baseline HR Max-HR Min was 18, and his baseline (five-minute) SDNN was 82, higher than most patients with serious anxiety disorders.

We conducted a resonance frequency assessment, following the protocol developed by Paul Lehrer and colleagues. The resonance frequency is the breathing rate producing the greatest HRV, as measured by HR Max-HR Min, SDNN, and phase synchrony between breathing and heart rate changes.

We identified Jorge’s resonance frequency as 6.0 breaths per minute. Biofeedback training sessions were conducted using a Thought Technology Infiniti™ system, using a blood volume pulse sensor for heart rate and a respiration band placed around the abdomen to monitor breathing. Jorge learned quickly to produce good line graphs of respiration and heart rate, at six breaths per minute, with respiration and heart rate in synch, peaking together. He practiced two to three times a day, using the EZ Air breath pacer on his laptop (available at http://www.bfe.org).

**Level 3: Mindfulness.** In the first session in mindfulness-based psychotherapy, Jorge was instructed in mindfulness meditation, with an emphasis on remaining present to whatever presented itself during his daily times of meditative sitting. In four additional sessions, he was encouraged to cultivate a sense of observing whatever transpired within and around him during the day. He was encouraged to cultivate seven key attitudes that comprise mindfulness: nonjudging, nonstriving, acceptance, trust, nonattachment, patience, and beginner’s mind (Kabat-Zinn, 2013). During each session, Jorge reviewed situations that were anxious or uncomfortable and practiced visualizing situations within a frame of mindful awareness. Each week, he set goals to return to uncomfortable situations on purpose and use his breath practices and mindfulness attitudes to experience the situation in a fresh way.

As an example, in his third week, Jorge was given the “train window exercise” as homework to assist his application of mindfulness to anxious situations at work. He was instructed in the session as follows:

Picture that you are on a train at the window, passing across a landscape. Simply notice and accept what comes into view and what passes from your awareness. If landscape features come into view, you are not responsible for changing them, keeping them in view, or making them disappear. If human beings come into view, engaged in activities, you are not responsible for judging their actions, solving their problems, keeping them in view, or making them disappear. Now, carry the train window with you into your everyday life. Be aware of everything that happens as if you were on that train, observing through the window. Accept what happens around you mindfully, with acceptance, and without judgment. Be aware of events and persons that draw your attention; accept the event, the person, and your attention to it, without judgment or evaluation. If you experience compassion or other feelings for those outside the window, allow the feelings to unfold. Notice the feelings and accept them.

**Level 3: Progress.** Jorge showed regular progress in his HRV training. His respiration and heart rate line graphs on the biofeedback display became more smooth and sinusoidal. In training sessions, he produced HR Max-Min scores of 32 and SDNN scores of 123 and 128. By the eighth session, he produced a pretraining (five-minute) baseline with an HR Max-Min of 27 and an SDNN of 104. These
increases showed improvements in baseline HRV and suggested greater physical and emotional resilience.

Jorge also reported that mindfulness was becoming second nature to him, a special kind of presence he found himself shifting into on a frequent basis at work and home. He felt reflective, mindful, and aware in many areas of his life. Jorge himself noted that HRV training and mindfulness practices were “flowing together.” As he practiced his resonance frequency breathing, he also felt more mindful of his own body and of his moment-to-moment experiencing.

Jorge committed to continue six breaths per minute breathing at home and work and to set personal mindfulness goals each week, and he made the decision to graduate from treatment.

Final Assessment

Jorge was seen in a follow-up 1 year after completing treatment. Jorge continued to show excellent skills with paced breathing, mindfulness, and HRV biofeedback. He reported satisfaction with his new comfort in speaking at work. He regularly wore his sombrero in work presentations, enjoyed the laughter, and was now more widely known around the company and with some of his company’s corporate clients as Pancho.

Jorge was also asked by the company president to head a pioneering program to mentor new minority recruits in management. The company committed to increase minority presence at the management level and charged Jorge with helping the recruits to understand and navigate the corporate culture. This step felt like a dream to him, and he looked forward to sharing some self-care strategies and skills with the recruits.

References


