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Qualifications:

- Research Assistant Professor, Dept. of Family Medicine, University of Pittsburgh School of Medicine
- Board certified psychologist
- Over 15 years clinical experience
- Biofeedback and meditation instructor
- Guest lecturer on mind-body therapies

Education:

- **University of Michigan**, BA Psychology, Anthropology
- **University of Virginia**, PhD, Clinical Psychology

Focus Areas:

- Psychological and mind-body approaches to disease, stress, and pain management
- Biofeedback
- Meditation, guided imagery
- Cognitive behavioral therapy

People with pain from Chiari and syringomyelia often feel like they are on a never ending quest for relief. To help with this journey, In The Spotlight has talked with pain practitioners, acupuncturists, and health psychologists (to name a few).

This month, we turn our attention to some therapies which do not get a lot of attention and which many patients may not be aware. So called mind-body therapies, such as meditation and biofeedback, stress the connection between the body and mind. Many believe that modern medicine, in spite of its tremendous advances, has ignored the potential of the powerful mind-body connection. Indeed, in the US, there has been a split in thinking about the mind-body; problems are either in the mind or in the body. In contrast, these therapies emphasize the unique, inherent connections between the mind and the body.

As patients, we need to be open to evaluating any therapies or techniques that may improve our quality of life. To help us evaluate mind-body therapies, we turn to Carol Greco, PhD, Assistant Professor of Family Medicine at the University of Pittsburgh. Dr. Greco has over 15 years of clinical experience; uses biofeedback, meditation, and cognitive therapy to help her patients; and performs research on mind-body therapies.

We put Dr. Greco In The Spotlight...

How do you define mind-body therapies?

G: The term "mind- body therapies" covers a really broad range of activities and treatments. Mind-body therapies can range from movement-based activities like yoga and T'ai Chi, to techniques that are more mentally focused, like relaxation training, biofeedback, guided imagery, self-hypnosis, and meditation. Basically, I think of Mind-Body therapies as those that include both body awareness and mental focus in the service of improving health and well-being. One essential element of mind-body therapies - the patient is an active participant rather than the passive recipient of treatment. The doctor does not perform a procedure on the patient, rather, the patient has to learn something new and then practice it for it to be effective.

How did you become interested in them?

G: During my doctoral training in psychology, I was very fortunate to receive an internship at a behavioral medicine clinic. The focus of our work was to help people who had chronic pain and/or medical diseases learn how to improve their symptoms without adding more drugs or surgical interventions. I used biofeedback training to help people learn how to reduce or eliminate their symptoms, such as headache, high blood pressure, and abdominal pain. Right then, I decided that this was going to be my focus - to teach people that they have the power to reduce symptoms that they might have previously thought were outside of their control.

How many pain patients would you estimate you've seen clinically?

G: Approximately 200-300. Many of these have been participants in research programs that were designed to test biofeedback or other relaxation interventions.

When a pain patient comes to your hospital, do they ask to use a mind-body approach, or is it recommended by someone?

G: Sometimes mind-body approaches are recommended by another treatment provider such as the primary care physician. Often, the patient seeks such these approaches on his or her own.

What types of mind-body treatments are available for chronic pain patients?

G: Chronic pain patients who are interested in mind-body treatments can go a couple of different ways. They can find a psychologist who specializes in pain or in behavioral medicine. The psychologist should be qualified to provide relaxation training, imagery training, and perhaps self-hypnosis or biofeedback. Often such services are offered by nurses as well, which is very helpful. Alternatively, the pain patient may look for yoga or T'ai Chi classes in their community or offered through their insurance company. But, it is very important that there is good communication between the teacher, the patient, and the patient's physician, because the movements may need to be modified for the patient, and the teacher needs to know how to safely do this.

How do you evaluate a chronic pain patient and decide what treatment(s) to try?

G: First of all, I would never be the first person to evaluate the patient. The chronic pain patient would have been thoroughly evaluated by their physician and possibly a pain specialist prior to seeing me. The mind-body therapies would complement, but not replace, medications and other treatments. In terms of deciding on what types of treatments to use, I would evaluate several factors: the role of stress, the patient's awareness of behaviors that make the pain worse and better, the patients preferences regarding treatments, and motivation level. Often during the course of treatment, which might last for 6-10 sessions, I would use several different, but related techniques, such as biofeedback, progressive muscle relaxation, imagery, and brief forms of meditation. Typically the patient will develop the motivation to practice the method that they like best and find most effective.

Does someone have to believe the mind-body approach will work for it to be effective?

G: That is tricky. I may tell the patient, "You don't have to believe that this treatment will work, but you do have to practice it." It is certainly easier to practice if you think it will help. On the other hand, whatever their initial beliefs, most people can notice a reduction in their pain during the very first time that they participate in a relaxation exercise. So, they are often quite surprised. It is great to be around when the people realize that they can create a positive change for themselves by changing their behavior.

What is biofeedback and how does it work?

G: Biofeedback uses physiological monitoring and feedback to let the patient develop awareness of, and learn to influence, bodily processes such as muscle tension, heart rhythms, and temperature. We use electronic devices to read the physiological signals. Those signals are then translated into visual or auditory information. For example, the patient may see a graph on a computer screen that displays changes over time in their hand temperature. The patient is taught to increase their hand temperature, or decrease their muscle tension level, or change the pattern of their heart beats. The patient learns what internal cues are associated with changes in the feedback signal, and over time, they become their own biofeedback device. They practice a relaxation technique such as deep breathing, and they begin to feel calm and relaxed, and they frequently reduce their pain level. Using the electronic monitoring is especially helpful at the beginning of treatment, but later on, the patient typically does not need it to achieve benefits.

Do you use biofeedback to help pain patients?

G: Biofeedback can be very, very helpful for pain patients. Many chronic pain patients develop the perception that their pain is constant, unchanging, and that there is nothing that they, or anybody else, can do about it. Biofeedback can help them to realize that they can make changes in their posture, in their breathing, and in their muscle tension levels, and these changes are associated with reduction in pain.

How does biofeedback reduce pain?

G: Often when a person is in pain, they tend to tense up their muscles. Sometimes, people in pain start to have certain thoughts about their pain, such as "it will never get better" or "I can't stand this." The extra tension, and the negative thinking actually can make the pain feel worse. With many patients, if you ask them to focus on those negative thoughts, you can see the muscle tension feedback signals and temperature signals get worse. Biofeedback is used to help the person to really relax, which reduces muscle tension and reduces pain. Biofeedback can also give the person a sense of control over their symptoms, and convince them that the way they think about things can have a positive or negative impact.

Is there evidence that biofeedback and other types of mind-body therapies can help with chronic pain?

G: There is a great deal of scientific evidence that biofeedback and various other types of relaxation training can help with chronic pain. There are actually decades of well-designed studies on these therapies. But, that doesn't mean that these therapies will take away all of a person's pain on a permanent basis. Mind-body therapies that focus on relaxation are great tools to have in your toolbox for managing your pain so that you can get on with your life. In recent years, there are more and more studies that report on the health benefits of meditation. For example, an eight-week mindfulness meditation program has been shown to have a number of benefits, such as reducing pain and distress in patients, and enhancing immune system function and changing brain-wave patterns in participants.

How do you define meditation?

G: People define meditation in many different ways. My working definition is: the attempt to bring non-judgmental awareness to what is happening in the present moment. Learning to meditate usually includes time spent in silence, sitting on a cushion or chair, attending to the breath, and noticing and letting go of perceptions such as thoughts and sensations. Although meditation practice can be very relaxing, it can be very challenging and it is more of a philosophy or way of life than other forms of relaxation or stress management. For example, I have been teaching patients using biofeedback and other forms of relaxation training for about 12 years, and I am very good at using them myself. I have also been practicing meditation for about ten years, and I am always learning more.

What does your current research focus on?

G: In the upcoming months we will start a research project on meditation for older adults with chronic low back pain. We are also planning a study that will test whether meditation is helpful for women who have menopausal hot flashes. I am also conducting a study to determine whether depression and other psychological factors increase the risk for development of cardiovascular disease in lupus.

What is on the research horizon that excites you?

G: One area of research that I think is fascinating is the influence of positive emotions on health. There have been a number of epidemiological studies that show that heart patients with positive attitudes have reduced risk of future cardiac events. With my colleagues at the Center for Complementary Medicine and the University of Pittsburgh, I hope to research whether a brief meditation technique that focuses on sustaining positive feelings can have positive effects on heart health.

Do you believe that issues such as acceptance of a chronic disease and outlook on life influence chronic pain?

G: Definitely! Outlook on life is very important. In order to do their best at managing symptoms, a person should learn about their chronic disease. Probably most important is - the person needs to keep in mind that they are more than their disease, and realize that there is always more that is right with them than wrong with them!

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