FEATURE

Children Under Stress and Trauma: The Use of Biofeedback, Cognitive Behavioral Techniques, and Mindfulness for Integrated and Balanced Coping

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This article presents a modified form of cognitive behavioral therapy (CBT) as an efficient form of therapy for children suffering from anxiety or from symptoms that are related to trauma but do not fit a complete diagnosis of posttraumatic stress disorder (PTSD). Clinical experience has shown that CBT alone is not always sufficient in treating anxiety and PTSD. Therefore an integrated approach is presented here, including physiological and mindfulness treatment components to create a more powerful form of therapy. Although this therapy was developed for children in trauma situations, this integrated approach is relevant for children in general and for adults as well. In this article, we describe the rationale for the integrated approach, and give an example of its implementation in the case of A., a girl who lives in an area that has lately experienced many traumatic situations.

Cognition Is Not the Whole Story

David Servan-Schreiber (2005), in his book *The Instinct to Heal: Curing Depression, Anxiety, and Stress Without Drugs and Without Talk Therapy,* quotes a Tibetan physician who argues that in Western culture, people used to consider the physiological symptoms of mental disorders (such as tiredness, weight gain or loss, change in heart rate, headaches) as physiological aspects of mental problems. In the East, the concept is often the opposite. That is, loss of self-esteem, sadness, and the inability to enjoy life seem to be the mental manifestations of physiological problems. The physician argues that the right way to look at this is to understand that physiological and mental symptoms represent two aspects of an unbalanced person.

Science backs up the Tibetan physician from another angle. The concept of two brains or two minds proposed by Joseph LeDoux (1996) has been recognized almost universally. One brain is the cognitive rational brain of the neocortex or the prefrontal cortex, and the other is the emotional brain of the limbic system. The first organizes the external world, awareness, language, attention, problem-solving, and planning. The second, made up of very different brain tissue, is responsible for feelings and survival responses. Its activity is unconscious, instinctive, and reflexive. The emotional brain is not always connected to thoughts and language. It is very much connected to the autonomic nervous system, and it controls feelings.

Emotional disturbances are the result of disturbances in the functioning of the emotional brain. The source of these disturbances is usually past painful experiences, which cause problematic physiological conditioning but also problematic cognitive structures. These experiences continue to control feelings and sensations through the cognitive structures they built in the past, but also without the mediation of cognition, directly from the emotional brain. This is possible because the brain's emotional centers may bypass the neocortex and cognition. Therefore, sensory cues provided by memories may trigger emotional responses without the mediation of cognition. This phenomenon can be seen in posttraumatic stress disorder (PTSD) and in panic disorders where the cognitive involvement in the panic attack is very weak. Therefore, although cognitive behavioral therapy (CBT) is very efficient in treating these kinds of disorders (Van Balkom et al., 1997), it might not be enough.

Past influences on the emotional brain must be discharged, and this process should involve the body because cognition is not always connected to the emotional brain. This is accomplished by the second component in therapy, the physiological component.

The Second Component of Therapy: Physiology

The goal of physiological work in therapy is to release existing vigilance, tension, and preparedness due to past experiences and future fears. This is not easy to accom-

plish with patients suffering from anxiety disorders, especially when they are surrounded by or even directly involved in trauma. Furthermore, "letting go" of this tension may be very frightening because the patient may feel unprotected and unsafe while entering a state of relaxation. This is even more pronounced in children, where the need for control is a major issue and relaxation is achieved more actively, such as through games.

Role of Biofeedback in CBT

Biofeedback is a good candidate for the job of letting go, for it avoids the negative side effects of relaxation. While doing biofeedback, the patient lets go but at the same time experiences control over his or her body. Children enjoy very specific types of relaxation techniques, primarily those that are more active and that bring them to a state of mind of control, although not necessarily to relaxation. Biofeedback, and particularly heart rate variability (HRV) biofeedback, meet this goal very well (McCraty, 2002). HRV biofeedback is a good candidate for this goal because it deals with achieving a balance between the sympathetic and parasympathetic nervous systems.

The first role of biofeedback is, therefore, to achieve a higher order of control, being on balance.

Balance and Acceptance in CBT

The second role of biofeedback is to help to create a cognitive change. To understand this concept, we must examine what kind of cognitive change we desire.

Balance is not only a physiological issue. Balance is the core concept of CBT. Balance means not only giving up attitude extremes; primarily it is the cognitive process of acceptance.

Blackledge and Hayes (2001) proposed a whole new approach in CBT called acceptance and commitment therapy (ACT). Although we do not use this approach in its entirety in this article, some of the elements we have adopted here are similar.

Acceptance can be understood in a number of ways:

- Acceptance of reality when reality cannot be changed, instead of trying to control a situation at any price.
- Acceptance of uncertainty. A person must relinquish the wish to have total control and adopt a more realistic goal—to live in reasonable safety and under reasonable doubt.
- Acceptance of necessary suffering in order to avoid unnecessary suffering. For example, a person can accept one panic attack a day, 10 minutes in duration (necessary suffering). However, he or she should not have *to worry* all the time about the possibility of having a panic attack at any moment or *be depressed* because he or she may have one from time to time (unnecessary suffering).
- Accepting oneself with one's weaknesses and mistakes. A person should relinquish nonproductive criticism and replace it by commitment and taking responsibility.

A State of Physiological and Cognitive Acceptance

To achieve such a state of acceptance, the body and the mind must work together. The second role of biofeedback is to open a physiological window to create a state of mind of letting go where the person will be able to process balance and acceptance to create change. Biofeedback will help resolve the physiological tension that retains the negative emotions; it will help the person release this tension and achieve balance and acceptance.

Physiological Acceptance

Physiological acceptance is manifested in three bodily functions:

- Muscular activity—Relax the muscles by resting the body on a chair, a bed, or the floor.
- Breathing—Breathe slowly and steadily through the abdomen.
- Blood flow—Focus on the blood flowing through the fingers, letting it flow freely (usually the hands become warmer).

The Third Component of Therapy: Attention

The third component in our integrated therapy (other than the cognitive and the physiological) is attention, that is, *creating acceptance as a basis for change by changing and controlling the focus of attention*. Let us discuss it through an example.

A. is a 12-year-old girl who came to therapy because she was afraid to get on a school bus. Such fears were common in Israel's environment of terror attacks following the current conflict between Israelis and Palestinians. Although bus explosions were common at the time, school buses generally seemed to be safe.

A. claimed that she was afraid the school bus would explode. It appeared she was asking for a guarantee *to be* safe on the bus before getting on. The thought that the

bus would explode was a reality for her. The threat was based upon her past experience and knowledge (many terror attacks in Israel against the civilian population). Therefore, she feared that it would happen in the future, and more specifically, that it would happen to her.

The goals of the therapy based on CBT principles were the following:

- To relinquish the need *to be* safe (accepting that she cannot control reality) and to replace it with the wish *to feel* safe, as her friends do.
- To understand that the thoughts or images of the bus exploding were in her mind, and that they were just thoughts and not reality. Therefore, she had to learn how to control her thoughts, rather than to deal with reality. Reality seems to be safe enough to her parents and her classmates.

The attentional technique I used in treating A. was distraction. A. couldn't control reality, but she could decide if she wanted to pay attention to her scary thoughts. She could choose whether she wanted to cooperate with these thoughts and feel their threat, or perhaps not. This is not at all obvious. In CBT, many theoreticians and therapists believe that complete exposure is necessary in order to overcome anxiety; distraction, of course, is not full exposure. This issue is discussed below.

Mindfulness and Distraction

An attractive and efficient way to learn how to distract oneself from a particular thought or image is by means of mindfulness, by "being in the present moment." Since the threat comes from the girl's experience and knowledge of the past and from her fears of what the future may hold, remaining in the present will keep her free of fears. How can this be accomplished? Before returning to A., we need to have a look at the potential contribution of mindfulness.

To simplify, I will describe two steps in mindfulness:

- The first step to acceptance by mindfulness is some form of "observing meditation," which relates to the object in the mind as neutral. A thought is just a thought. Paying attention to what is inside, a person is aware of different sensations, noises, and thoughts, and he or she just observes them without cooperating with or rejecting them. Here one is learning a new mode of attention in which he or she is aware of thoughts, emotions, and sensations, but is not involved in them. It is a state of observing, registering, and letting go.
- The second step is complete experience (as in Vipasana meditation). The person agrees to experience what is in his or her mind—and not let it go—while experiencing it in a nonjudgmental way. Through this mode of attention, the person looks straight at his or her fears and lets them gradually dissolve.

What immediately comes to mind is that these two types of mindfulness are related to the two forms of exposure in CBT: full exposure and exposure with distraction or any other defense mechanism. Both reflect modes of acceptance of the present. In both of them there is acceptance of reality. Although it is usually very clear that full exposure is best in order to overcome anxiety, the argument here is that sometimes, and especially with children, distraction is much more reasonable.

A. cannot be expected to get on the bus while she is thinking about a possible explosion, while telling herself "whatever will be, will be." This type of full exposure appears too frightening and not necessary. Hence, it seems that it is often preferable to teach people to distract themselves from what they fear. Moreover, exposure might not be suitable for the coping abilities of some people, particularly children.

A Cognitive Change and Needed Change in Attention

The girl now understands the situation as follows: "My friends who ride the bus live in the same reality as I do. They just don't think about it in the way I do. Just teach me how not to think about the possibility of explosion." (Teach me how to distract myself.) She indicates here her willingness to relinquish her wish to be safe in favor of a wish to feel safe.

Integrated Work With the Girl

Cognitively, the girl reached the point at which she could ask for help in coping with her fears and no longer sought to control reality. After realizing that she was dealing with fear and not with a real risk, she was willing to distract or relax. What was then needed was to back up her disconnection from her fears using both the physiological component and the first step in mindfulness. The physiological component helped resolve the strong connection between past experiences and sympathetic responses. The mindfulness component taught her to let go of her negative thoughts, being an observer only, and therefore not activate negative feelings. Just as we have found with many children, A. liked very much to practice mindfulness.

It is important to mention that although A. lives in a society that has been exposed to trauma through the media, she herself has not experienced any specific trauma. Certainly, she has traumatic pictures in her mind, but she has not undergone any specific personally traumatic event. Therefore, this case is applicable to any case of anxiety.

In cases where a past traumatic event is involved, a longer process will likely be needed to disassociate the trigger (in this case, the bus) from its sympathetic negative conditioning.

Summary

CBT is an effective technique for coping with anxiety disorders. Despite its effectiveness, many times it alone is not sufficient because of the particular characteristics of the emotional brain. This brain is responsible for emotions and physiology, but often is functioning separately from the cortex and from cognitive influences. Hence, the physiological component in therapy becomes very important. This therapy component helps make cognitive change more possible by releasing the body from past memories, vigilance, and tension. In order to make a change, one needs to adopt a process of acceptance. This process becomes possible with the help of biofeedback that facilitates acceptance without relinquishing control. This therapeutic work can be accomplished much better with the help of mindfulness techniques, and in the case described here, through distraction.

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Cognitive-behavioral therapy aims to change our thought patterns, our conscious and unconscious beliefs, our attitudes, and, ultimately, our behavior, in order to help us face difficulties and achieve our goals. Psychiatrist Aaron Beck was the first to practice cognitive behavioral therapy.Â One popular technique in CBT is ABC functional analysis. This technique helps you (or the client) learn about yourself, specifically, what leads to specific behaviors and what consequences result from those behaviors. In the middle of the worksheet is a box labeled â€œBehaviors.â€Â These are factors that led up to the behavior under consideration, either directly or indirectly. On the right side is the final box, labeled â€œConsequences.â€ Since cognitive therapy, behavioral therapy, and mindfulness have all been shown to be effective, they have been combined into MCBT. So MCBT isn't a new therapy, nor is it necessarily one specific treatment used for all similar cases, but it is the use of a variety of methods that are chosen based upon each individual's problem. Thus, MCBT may look very different for each client because it is specifically designed for each person and problem.Â Therefore, it is important for those with severe depression to use the combination of medication and MCBT to effectively control the symptoms. 4) Trauma.Â Comparing the Efficacy of EMDR and Trauma-focused Cognitive-Behavioral Therapy in the Treatment of PTSD: A Meta-analytic Study. Psychological Medicine, 36, 1515-1522. Children Under Stress and Trauma: The Use of Biofeedback, Cognitive Behavioral Techniques, and Mindfulness for Integrated and Balanced Coping. Biofeedback, 33(4), 149-152. Green, R., Dicks, S., & Buckroyd, J. (2009). Counselling in culturally diverse inner-city communities: the rise and fall of the Kabin counselling project. Journal Of Social Work Practice, 23(3), 315-326. Martin, L. L., & Kleiber, D. A. (2005).Â A Literature Review and Analysis of Mode Deactivation Therapy. International Journal Of Behavioral Consultation And Therapy, 6(4), 296-340. Mensinga, J. (September 01, 2011). The Feeling of Being a Social Worker: Including Yoga as an Embodied Practice in Social Work Education.