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New Emotion Regulation Skills in Dialectical Behavior Therapy

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This is the third article in a series on the latest developments relevant to Borderline Personality Disorder (BPD) and Dialectical Behavior Therapy (DBT). The last article reviewed strategies of exposure and opposite action for reducing self-hatred and dysfunctional shame. Within the next two years, a new DBT skills training manual will be published, in which skills will be reorganized and several new skills will be added. This article will focus on two new emotion regulation strategies.

At its core, DBT is a cognitive-behavioral therapy (CBT), based on empirically-supported mechanisms of change. DBT skills training incorporates virtually every CBT strategy found to be effective in helping people change their emotions and behaviors: activity scheduling (from cognitive therapy), advantages/disadvantages analysis (also from cognitive therapy), exposure therapy (called “opposite action”), progressive muscle relaxation, distraction, and many others. As new evidence emerges regarding effective ways to help clients manage their emotions and change their behaviors, DBT evolves by incorporating these new strategies into DBT skills training.

The original DBT skills manual mentions the skill of distracting from distressing emotions by eliciting intense physical sensations, for example by holding ice cubes. The newest skill utilizing cold sensations as distraction involves immersing one’s face in cold water. Dr. Linehan added this skill to DBT after becoming aware of research on the human dive reflex elicited by this procedure. While cold water face immersion may serve as an effective distraction technique, it likely also functions to directly regulate the physiological pathways believed to mediate emotional arousal. Studies have shown cold water face immersion quickly and dramatically activates the parasympathetic branch of the autonomic nervous system resulting in a rapid firing of the vagus nerve and subsequent bradycardia, a slowing of the heart rate of at least 20 percent. This emotion regulation technique involves filling a large bucket with ice water and submerging the entire face, including the temples, for as long as possible (at least 30 seconds, although a minute is preferable) in water as cold as possible (without causing pain). (Temperatures below 45 degrees Fahrenheit generally cause pain.) The client can repeat this technique several times, if needed. However, it is important to screen clients for heart arrhythmia disorders, as this procedure can be dangerous for those with cardiac irregularities.

We have conducted small experiments testing the efficacy of the dive reflex in reducing intense emotional arousal elicited when people face their phobic objects during exposure therapy. Our research participants experienced a 20-40 beats per minute reduction in heart rate during cold water immersion with half of the bradycardia resulting from breath holding and wetness on the face alone. More importantly, there were enduring increases in parasympathetic activity following immersion of the face in cold water. The human dive reflex is a robust finding; many studies show a reliable and large decrease in heart rate when the face is immersed in cold water. However, we do not know of any studies examining the application of the dive response with psychiatric patient populations.

Compared to the first DBT skills manual, the new manual places a stronger emphasis on relaxation strategies, particularly progressive muscle relaxation and breathing techniques. Our current study evaluates slow, rhythmic diaphragmatic breathing as a way to reduce emotional arousal in patients with BPD. Studies have shown that slow breathing effectively activates the parasympathetic nervous system in normal populations and in chronic pain patients. Our BPD research participants use a portable biofeedback device giving immediate feedback about natural fluctuations in heart rate, known as heart rate variability (HRV). Patients are instructed to breathe at a slow pace and to seek their optimal pace (slightly varying across individuals) using biofeedback while breathing from the lower abdomen. The goal of this breathing method is to improve emotion regulation by maximizing HRV and parasympathetic activity.

The new DBT skills manual will also place more emphasis on intense physical exercise as a way to reduce emotional arousal. These three skills (cold sensations, relaxation strategies, and intense physical exercise) together comprise the new DBT emotion regulation skills triad and are believed to be the most effective techniques for reducing intense emotional states.