VITANYA
BRAIN PERFORMANCE

Increasing Mental Resilience
&
Creating High Performance Communities

The Challenge

Police Officers and other law enforcement personnel are vulnerable to multiple physical, emotional and mental health issues cause by the stress of the profession. One study (Basinka & Wiciak) revealed stressed and fatigued officers suffered have depressive system 2x that of the general population, experience a 50% higher rate of divorce than general population, and experience greater burn out levels. They also reported increased mistakes on paperwork, higher rate of citizen complaints, and higher risk of being injured or killed on the job. Compassion fatigue and burnout may also result from chronic workplace stress and exposure to traumatic events during the COVID-19 pandemic.

Stress Resilience

Stress resilience has been defined as the ability to achieve a positive outcome in the face of adversity. The brain, as the central organ of stress and adaptation to stressors, plays a pivotal role in responses to behavioral and psychological stressors that can also play a key role in adaptation via stress resilience (McEwen, Gray, & Nasca, 2015). The architecture of the brain allows for neuroplasticity to make adaptation, while studies of gene expression and epigenetic regulation have revealed a brain that is dynamic and ever-changing (Gray et al., 2013; Nasca et al., 2013). The goal then is to assist the brain in recognizing biological changes that underlie flexible adaptability and support resilience to achieve positive outcomes, especially when individuals are challenged with new stressors.

A New Approach: Neuro-Guidance Technology

Since 2006, a new clinical approach that is a radical departure from all existing approaches, that is neither prescriptive nor deficit-focused has shown promise in the most challenging cases seen in psychiatry (Othmer, 2016). This emerging approach is a form of neurofeedback that does not target dysfunction, but instead is intrinsically function oriented. This neurofeedback approach is one that allows the brain to make refinements to its processes, based on the subtle neurofeedback signal that it receives. (Othmer, 2017).

The Vitanya process uses the subtle neuro-response process and other additional components that support brain training in achieving optimal performance. An additional neuro-guidance technology is used to assist the brain in achieving flexibility in different states of arousal. Beta is targeted to assist with precision, focus, and problem solving. Alpha training is focused on a state of alert relaxation (Evans & Abarbanel, 1999), and theta is focused on the brain activities of memory, emotion, creativity, and sleep. Theta has also been found to reduce anxiety, depression, daydreaming, distractibility, emotional disorders, and ADHD (Beatty, Greenberg, Deibler, & O'Hanlon, 1974; Vernon, 2005), while Beta has been found to assist with depression, ADHD, and insomnia (Egner & Gruzelier, 2004).

Neuro-Nutritional Support

Additionally, supplements that target areas of neuro-processes are used to support the brain as well. Some research has proposed that antioxidants activate genes involved in neuroprotection such as up-regulation of endogenous antioxidant systems (Dore, 2005; Moskaug, et al., 2005), and enzymes are key in supporting the 'second brain' in digestion. As an important part of the process, Brain Performance Coaches are there to integrate scientifically validated assessments into the process, providing clients with support and identifying areas for potential growth.

Tele-Neuro Remote Program

Vitanya is able to provide its program via remote services. Programs are being provided through personal brain performance coaching through tele conferencing and remote neuro technology in police and fire departments, in corporations, in rural American colleges, in foster care homes and in addiction clinics and in individuals home throughout the country. The Vitanya Program is a 36-session program given over the course of approximately six months. Participants must be available for two sessions per week (approximately 30 minutes each visit) for 12-weeks, and one session a week (30 minutes each) for the last 12-weeks. Managing health remotely and the advantages of technology breakthroughs create a strong healthcare system.

Recent Studies

Over the course of the last seven years, Vitanya has developed programs, conducted studies and continues to work with police, active military, veterans and 1st responders in multiple locations with similar positive outcomes.

At the conclusion of a 24-week, 36 session study early this year, when working with Veterans in the corporate environment, we measured a **73% decrease in PTSD symptoms, 271% increase in sleep satisfaction, a 30% improvement in quality of life, and a 17% average increase in 9 areas of executive functioning.**

A 24-week, 36 session remote program that completed in October of 2019, working with military veterans returning to college showed a **36% reduction in PTSD symptoms (half did not meet PTSD criteria at beginning of the study), an 88% improvement in sleep satisfaction, an 18% improvement in quality of life, and a 32% average increase in 9 areas of executive functioning**.

List of Assessments to measure client progress include: Current Assessments

Comprehensive Executive function Inventory Adult (CEFI-A)
Naglieri and Goldstein (2017) developed the CEFI-A, which is a 72-item measure used to examine a wide spectrum of behaviors associated with executive function in nine different areas including: attention, inhibitory control, planning, emotional regulation, initiation, self-monitoring, flexibility, organization, and working memory. The CEFI-A uses a 6-point Likert-type scale and has an additional 6 negative impression scale items to assess for validity of assessment.

Resilience Scale – 14 item (RS14)
In 2009 Wagnild developed the 14-item resilience scale based on the original Wagnild & Young (1993) resilience scale. This 14-item measure uses a Likert scale from 1 (strongly disagree) to 7 (strongly agree) to assess a person's capacity to successfully maintain or regain mental health and well-being in the face of significant adversity or risk.

The Pittsburgh Sleep Quality Index (PSQI)
Buysse, Reynolds, Monk, Berman, & Kupfer (1989) developed the PSQI, which is a 19-item measurement devise that examines sleep in seven domains: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction. The assessment uses a Likert-type scale where answers are scored on a 0-3 scale where 3 reflects the negative extreme.

World Health Organization Quality of Life Scale – Brief (WHOQOL-Bref)
The WHOQOL-BREF instrument comprises 26 items, which measure the following broad domains: physical health, psychological health, social relationships, and environment. The WHOQOL-BREF is a shorter version of the original instrument that may be more convenient for use in large research studies or clinical trials. This scale was developed by the WHOQOL Group with fifteen international field centers, simultaneously, in an attempt to develop a quality of life assessment that would be applicable cross-culturally.

PTSD Checklist-5 (PCL5)
The PCL-5 was developed to assess for the presence of PTSD and is consistent with the DSM-5 (Blevins, Weathers, Davis, Witte, & Domino, 2015). The PCL-5 is comprised of 20-questions that are on a Likert scale from 0 (not at all) to 4 (extremely) which are summed, producing an aggregated score ranging from 0 to 80. Higher scores indicate the more severe the presence of PTSD symptomatology.

Depression, Anxiety, and Stress Scale (DASS)
The DASS is a set of three self-report scales designed to measure the negative emotional states of depression, anxiety and stress. Originally developed as a 42-item scale (Lovibond & Lovibond, 1995) it was later developed into a short form (Henry & Crawford, 2005). Each of the three DASS scales contains 7 items where Subjects are asked to use 4-point Likert scales to rate the extent to which they have experienced each state over the past week. Scores for Depression, Anxiety and Stress are calculated by summing the scores for the relevant items.

Past Assessments

PTSD Checklist – Civilian Version (PCL-C)
The PCL-C was developed to assess for the presence of PTSD and is consistent with the DSM-IV (Weathers, Huska, & Keane, 1991). The PCL-C is a standardized self-report rating scale for PTSD comprising 17 items that are on Likert scale from 1 (not at all) to 4 (quite a bit) which are summed producing a score from 17 to 68. Higher scores indicate the more severe the presence of PTSD symptomatology.

Center for Epidemiologic Studies Depression Scale: Revision (CESD-R)
The 20 items in CESD-R scale measure symptoms of depression in nine different groups as defined by the American Psychiatric Association Diagnostic and Statistical Manual, fifth edition. These symptom groups that are assessed by the CESD-R are:

Sadness (Dysphoria)	Loss of Interest (Anhedonia)	Appetite
Sleep	Thinking /Concentration	Guilt (Worthlessness)
Tired (Fatigue)	Movement (Agitation)	Suicidal ideation

Burns Anxiety Inventory (BAI)
The inventory is a checklist of thirty -three symptoms related to anxiety. They are broken down into three categories: anxious feelings, anxious thoughts, and physical symptoms. A person taking the assessment ranks each item on a scale from zero, "not at all," to three, "a lot." Anxious feelings items include "feeling that things around you are strange, unreal, or foggy" and "apprehension or a sense of impending doom." Thoughts include such items as "difficulty concentrating" and "fears of being alone, isolated, or abandoned." Physical symptoms list sixteen items, including "pain, pressure, or tightness in the chest" and "restlessness or jumpiness."

Generalized Anxiety Disorder 7-item (GAD-7)
The Generalized Anxiety Disorder-7 (GAD-7) was developed to screen for Generalized Anxiety Disorder (GAD) (Spitzer, Kroenke, Williams, & Lowe, 2006). The GAD-7 responses range from 0 (not at all) to 3 (nearly every day) and aggregated scores ranging from 0 to 21. Higher scores indicate the greater severity of anxiety.

Patient Healthcare Questionnaire-9 (PHQ-9)
Kroenke, Spitzer, and Williams (2001) developed the PHQ-9 to assess the presence of depression. The PHQ-9 responses range from 0 (not at all) to 3 (nearly every day) and scores are summed ranging from 0-27. Higher scores represent the greater severity of depression.

Suicide Behavior Questionnaire-Revised (SBQ-R)
Osman, Bagge, Gutierrez, Konick, Kopper, and Barrios (2001) developed the SBQ-R to assess suicidality. It probes for different dimensions of suicidality: lifetime suicide ideation and/or suicide attempt, frequency of suicidal ideation over the past 12 months, threat of suicide attempt, and self-reported likelihood of suicidal behavioral in the future (Osman, et al., 2001). SBQ-R scored range from 3 to 18, with higher scores indicating the higher the risk of suicide.

Experiences in Close Relationships
Brennan, Clark, and Shaver (1998) developed the Experiences in Close Relationships (ECR) scale which assesses adult attachment on two factors: anxiety and avoidance. The ECR includes 36-questions which are on a 7-point Likert scale with responses ranging from 1 (disagree strongly) to 7 (agree strongly). The ECR produces two means, one for each factor, anxiety and avoidance, with mean scores ranging from 1 to 7, respectfully. Higher scores on each factor, indicate greater presence of each construct.

Response to Stressful Experiences Scale (RSES-22)
The Response to Stressful Experiences Scale (RSES-22) is a 22-item measure to assess several dimensions of resilience (Johnson et al. 2011). The RSES-22 is comprised of 22-questions that are on a Likert scale from 0 (never true) to 4 (always true) which are summed, producing an aggregated score ranging from 0 to 88. Higher scores represent the more resilient one is.

Sleep
An item in the QoL assessment measures sleep (1 = Very Dissatisfied, 5 = Very Satisfied).
"How satisfied are you with your sleep?"

An item in the PCL-C (5) assessment measures sleep (1 = Not at all, 5 = Extremely).
"Trouble *falling* or *staying asleep*?"

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