SELINUS UNIVERSITY
OF SCIENCES AND LITERATURE

Exploring the Clinical Efficacy of Brain-Switch 2.0™ in Regulating Trauma and Emotion-Based Issues

By Joachim Lee Tai Loong

Supervised by
Dr. Salvatore Fava, Ph.D.

A DISSERTATION

Presented to the Department of
Psychotherapy
program at Selinus University

Faculty of Psychology
in fulfillment of the requirements
for the degree of Doctor of Philosophy
in 2025

Abstract

This thesis investigates the effectiveness of Brain-Switch 2.0™, a method created by the author, for trauma, depression, anxiety, and other emotion-related issues. It is based on Neuro-Linguistic Programming's (NLP) sensory data processing technology / sub-modality processes and aims to disrupt negative consolidated memory patterns, facilitating natural positive memory reconsolidation, leading to better emotional regulation and mental wellness. Brain-Switch 2.0™ is a therapy tool that does not require detailed sharing of personal narratives of the issue/s, which helps prevent triggering emotional responses or amygdala reactivation. This study will use individual case studies to assess the empirical evidence on how effective the intervention and outcomes are within one to three sessions and to understand to what extend Brain-Switch 2.0™ aids recovery.

Acknowledgements

This thesis is a reality thanks to all the teachers, friends and clinical clients over the past 24 years who accompanied me on my clinical journey. With heartfelt thanks to everyone that imparted their knowledge and their lived experiences, I was able to confidently develop Brain-Switch 2.0™ and contribute to the larger field of psychotherapy. Without their presence and support throughout my journey, this thesis would not have been possible, and without a doubt, some of the ideas presented in this work were formed and shaped because of their influence on me.

I want to express my deepest thanks and appreciation to Prof. Salvatore Fava Ph.D. and the university staff for their support and guidance, and especially for the opportunity to carry out research in an academic institute that allows students from all over the world to contribute to research and advancement in clinical practice.

Table of contents **Page**

List of Figures

List of Tables

List of Graphs

Chapter 1: Introduction

1.1 Introduction: Background of the study

For any psychotherapist, to be effective in providing quality and effective interventions to individuals struggling with trauma and emotion-based issues is intrinsic and purposeful for being in the helping profession. However, recent research shows that clients that sought professional therapy reported that symptom reduction requires a substantial commitment of time and resources on a weekly basis. Treatment duration typically ranges between 12 to 16 weekly sessions or 15 to 20 sessions (APA Div. 12 (Society of Clinical Psychology)). According to one meta-analysis done by Kline AC, Cooper AA, Rytwinksi NK, Feeny NC (2018), evidence further suggests that people with co-occurring conditions or certain personality difficulties may require longer treatment (e.g., 12-18 months) for therapy to be effective. Individuals with chronic problems may require extensive treatment support (e.g., maintenance therapy to reduce the risk of psychiatric rehospitalization).

Furthermore, traditional trauma treatments like Prolong Exposure Therapy, Trauma-Focused Cognitive Behavioural Therapy and Cognitive Processing Therapy requires the individual to recall, narrate and be exposed to the traumatic event again. This process inevitably activates the emotional brain – the exact brain center that Trauma work is supposed to down-regulate. Rhoton (2021) Founder and former CEO of Arizona Trauma Institute, terms this as being Amygdala Centric and should be avoided.

On May 1st, 2023, I officially introduced Brain-Switch 2.0™ to the world, after refining it in my clinical practice for over a decade. It was at the insistence of my clients that I ought to share the process with the clinical fraternity as my clients found the changes and transformations they experienced yielded fast results, they felt emotionally safe (no intense emotional outburst) and the outcomes were lasting. Many were in long term therapy for years and saw small changes but only to relapse into their trauma again when triggered with life events pertaining to family, work and/or personal issues. With Brain-Switch 2.0™, they recovered from their trauma history and their mental health conditions improved after just one to three sessions. Having seen innumerable clinical successes and at their encouragement, I refined the process based on the findings from neuroscience and began teaching other psychotherapists on the Brain-Switch 2.0™ protocol. The anecdotal outcomes from some of the trained psychotherapists in the Brain-Switch 2.0 protocol were encouraging, "***I have one client who feedbacked that she found it (Brain-Switch 2.0) very good for her anxiety, she feels much better after that, and she told me she even tried to do it on her own a couple of times***", ***"I just saw another client who was crying while telling me about her childhood. After Brain-Switch2.0 she said, the things that happened were so long ago, they are just a distant memory", "I used Brain-Switch 2.0 on a client last month who had ended a bad relationship 3 years ago. He had been blackmailed by her into staying together, even getting engaged. It was something that had really traumatized him. I saw him again recently and he said he hadn't thought about her since our session"*** and ***"I was suggested by my university counsellor to have a session with Joachim Lee after I had a sudden mental health crisis (suicide attempt with Complex PTSD diagnosis) that left me almost unable to cope with daily life or my studies. Without having any expectations, and still actively suicidal, I attended my first session, and for the first time, I felt much lighter than I did previously. I could think further than just one day, and with a second session, I started to have hope again. The methods taught to me have allowed me to graduate from university, as well as help me through***

interviews without any anxiety or breakdowns. I am forever grateful as I would not have been able to reach so far and continue to reach higher from here on".

My personal experience and research into the Brain-Switch 2.0™ process informed me that the process quickly induces a subtle but positive change via the memory reconsolidation process. Memory reconsolidation is a phenomenon in which whenever long-term memories are reactivated, the memory will change and automatically updated. Each time the memory is activated, the chemical processes that created the neural trace are reactivated. If the circumstances are like the original event, the synaptic connections are maintained or strengthened. If, however, the situation has significantly changed (by shifting the sensory modalities of how memories are processed), the connections themselves can change. This is how I understood how Brain-Switch 2.0™ worked. Intrigued by this knowledge and lacking evidence-based data and only relying on anecdotal and psychotherapist outcome reports, this research aims to investigate just what the quantifiable changes are and whether there is empirical evidence to validate the anecdotal outcomes.

1.2 Research Problem

Trauma, depression, anxiety, and other emotional issues are barriers to mental wellness. Current therapies can be effective, but they often take a long time to show results. Recent advancements in neuroscience, particularly in the domain of memory reconsolidation, have provided a framework for developing interventions that target maladaptive emotional memories and rewire neural pathways for healthier psychological functioning.

By leveraging the principles of memory reconsolidation and employing sensory data processing mechanisms inherent in NLP, Brain-Switch 2.0™ aims to modify the neural encoding of distressing memories, thereby reducing their emotional charge and enhancing overall emotional resilience. Its content-free approach minimizes emotional overwhelm and promotes therapeutic engagement.

1.3 Research Objectives

To explore the clinical efficacy of Brain-Switch 2.0™, the following are the objectives to be achieved:

1. To assess how well Brain-Switch 2.0™ works in managing trauma, depression, anxiety, and emotion-related issues.
2. To examine the adaptive nature of human resilience underlying Brain-Switch 2.0™'s effects on trauma and memory reconsolidation.
3. To find important factors that affect how well Brain-Switch 2.0™ works in various individual cases.

1.4 Research Questions

To scope the research and to discover the efficacy of Brain-Switch 2.0™, the data collation and analysis will focus on the following questions:

1. How well does Brain-Switch 2.0™ lessen symptoms of trauma, depression, anxiety, and emotional disorders?
2. What visible effects does the method have on memory reconsolidation?
3. What personal and situational aspects affect the results of Brain-Switch 2.0™ treatments?

1.5 Significance of the Study

The clinical data will provide empirical evidence on how Brain-Switch 2.0™ is an effective, cost-effective and easy to implement therapy. The larger impact would mean many more will find resolution to their trauma and emotion-based issues.

1.6 Scope of the Study

Research Design:

The study will use a single-case approach, allowing for detailed examination of the effects of Brain-Switch 2.0™ over one to three sessions. Each participant acts as their own control, with stages for baseline, intervention, and follow-up.

Participants:

The sample size consists of three males and three females with either notable self-reported trauma, depression, or anxiety symptoms or are diagnosed by a psychiatrist.

To ensure consistency, the inclusion criteria are individuals assessed with PTSD, trauma-related stress, depression, or anxiety through the administering of assessment tools.

Recruitment of subjects / clients / participants will be organic and seen as a natural assessment and intervention process without the artificial control versus treatment group. In this manner, there is no clinical bias. All the subjects will be recruited when they independently initiate treatment at the Neuro-Therapy Psychotherapy Centre.

Intervention Protocol:

Brain-Switch 2.0™ will be facilitated across one to three sessions, customized to each participant's needs. The protocol will include:

1. Assessment of trauma, depression, anxiety, and emotional regulation issues.
2. Implementation of Brain-Switch 2.0™ techniques.
3. Post-intervention assessment of emotional and cognitive changes.

Data Collection:

Data will be gathered through the following assessment tools:

• Psychological assessments (ITQ, DASS 21, PHQ 9, and GAD 7).

• Brain activity mapping – Assessing brainwaves through the Clinical Q method. Clinical Q, developed by Dr Paul Swingle (2012), is a cost-effective clinical assessment tool that uses actual Clinical Client Database instead of a General non-client Normative Database to study the brainwave patterns. This means the Clinical Q comparisons are derived from clients who are in treatment and have brainwave patterns for depression, anxiety, trauma etc. The tools required to conduct a Clinical Q assessment are a Brain trainer system, the software and sensors and electrodes to collate the data from the scalp. The five sites to collect data are CZ, O1, F3, F4, FZ. Figure 1 below are the five sites where the electrodes are placed. Clinical Q assessment measures the five sites for the Beta, SMR, Alpha, Theta and Delta amplitudes, just like the qEEG. The results are then analyzed and the results will be used in the assessment.

• Participant feedback on their experiences and perceived improvements.

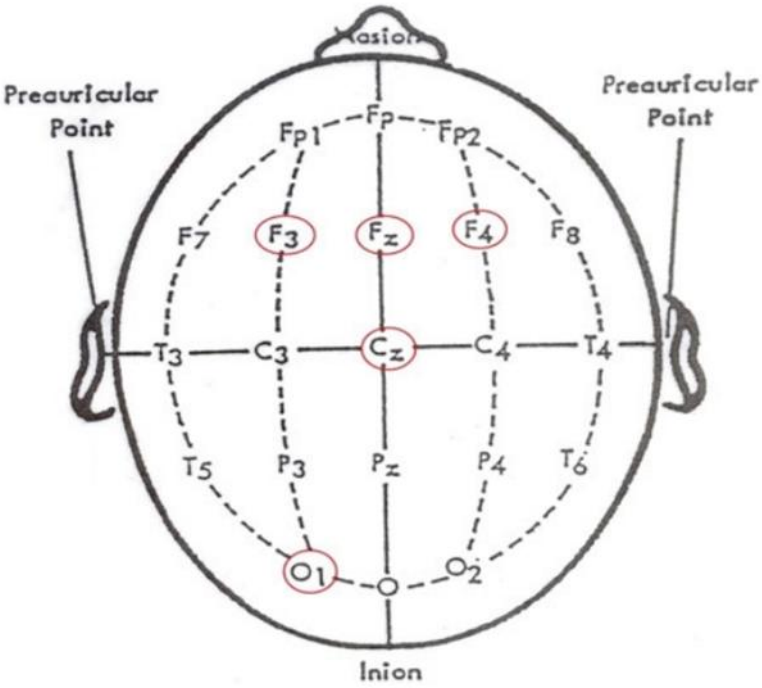


Figure 1: Five Location sites for the Clinical Q assessment

Data Analysis:

• Quantitative: Using time-series analysis to look at changes in symptom levels and rechecking the measurements.

• Qualitative: Gathering individual stories and personal insights from participants.

The research seeks to position Brain-Switch 2.0™ as an effective tool for trauma therapy and managing depression and anxiety. It connects new ideas in memory reconsolidation and the field of sub-modality work / sensory data processing with real therapy practices. Through six single-case studies, this paper aims to establish evidence base for the method and open doors for more research and practice in clinical settings.

Chapter 2: Literature Review

2.1 What is Neuro Linguistic Programming

Neuro-Linguistic Programming (NLP) was developed by Bandler, R. who specialized in mathematics and computers, and Grinder, J., a Professor of Linguistics in the early 1970s. They studied and modeled the psychotherapeutic techniques of three giants of that time, Virginia Satir, Fritz Perls and Milton Erickson. NLP is a psychological approach that explores the interactions between language, behavior and neurological processes.

The practical contribution of NLP is the studies of internal processes of human thinking and behaviour. NLP enables taking a glimpse into the behavioural context and seeing the internal processes that govern human behavior, i.e. the system of thinking that allows people to act effectively (Peng et al., 2015).

2.1.2 NLP and Sub-modality work

The evidence that supports the effectiveness of NLP strategies and sub-modality work extends to its impact on anxiety and depression (Andreas, S. 2012). A recent literature review underlined the role of NLP in the reduction of anxiety levels, validating its position as an effective intervention for mental health professionals (Nompo, Pragholapati and Thome, 2021). The integration of NLP in treatment protocols has demonstrated its practical and effective application without the traditional cognitive and emotive talk therapies techniques, with studies that highlight its effectiveness to improve the quality of life of university students and reduce symptoms of depression in various populations (Albalawi, 2014; Ybias, Ortibano and Madrigal, Madrigal, 2024).

A fundamental clinical principle of NLP is that the mind operates in a system of representations, strongly influenced by sensory modalities – visual, auditory and kinesthetic (VAK) modalities. Bandler and Grinder (1975) suggest that people process experiences through visual, auditory and kinesthetic modalities, which are fundamental in personal autonomy and are the key to therapeutic interventions when the internal state is disorganized. Brain-Switch 2.0™ leverages on this principle – facilitating sub- modality interventions, which involve altering how these sensory modalities are perceived and processed neurologically to facilitate therapeutic outcomes.

The Sub-modalities, within each sensory modality (for example Visual sub-modalities are far or near, colour or black & white, still photo or movie, bright or dark etc.) allow psychotherapists to update and reconsolidate emotional responses by changing their characteristics (Bandler and Grinder, 1975). For example, Grimley (2016) documented the efficacy of NLP to relieve post-traumatic stress disorder (PTSD) symptoms through personalized interventions through the modification in the sub-modalities. He referred to a case study in which a Vietnam veteran reported notable reductions in the symptoms following the techniques that involved visual and auditory recalibration. These findings resonate with a more extensive investigation that suggests that the modification of sensory perceptions can significantly affect emotional states (Derks and Gray, 2022). Gray, R., & Bourke, F. (2015) further documented how by modifying the memory processing by changing the sub-modalities deactivates the PTSD symptoms.

The literature review findings indicate that the exploration of NLP sub-modalities has considerable contribution to the psychotherapeutic community in which deactivation of the traumatic memories and better mental wellness can be achieved. It is evident that there is a need to integrate the modalities (VAK) - sensory experiences into a therapeutic framework to improve emotional and cognitive healing processes.

2.2 Understanding Memory Reconsolidation

In contemporary neuroscience, the concept of Memory reconsolidation has given both clinicians and researcher more insights into the fluidity and malleability of human memory. The reconsolidation of memory is a fundamental phenomenon that after the retrieval (in secular terms, when the past memory is reactivated by thinking and talking about it) of previously consolidated memories, an event that allows the reconsolidation of these memories in a state that can differ qualitatively from its original form. This phenomenon suggests that memories are not static entities; Rather, they are dynamic and malleable constructions that can be modified through reconsolidation.This phenomenon occurs when a memory is recovered or reactivated – simply by narrating or thinking about the memory, even if only briefly and at this phase of reactivation, it is subjected to modifications before being stored again. Necessarily, this process indicates that memories are not static but can be reconsolidated for new experiences or modifications to existing information (Nader, 2015). The traditional understanding of memory as a stable and immutable construction is debunked, since reconsolidation suggests a more dynamic interaction between memory recovery and reconsolidation processes (Brewin, C. R., Li, H., Ntarantana, V., Unsworth, C., & McNeilis, J., 2019).

The process that supports the reconsolidation of memory has been widely investigated, revealing the participation of specific brain regions that are an integral part of memory neuropathway connectivity. It has been shown that the hippocampus plays a fundamental role in the formation and stabilization of new memories, while the amygdala is essential for the emotional aspects of memories, particularly those that are related to fear (Schwabe, Nader and Pruessner, 2014). The activation of these areas during the recall of a memory seems to make it malleable to interruption or alteration, facilitating the integration of new information or the modification of existing memories. Such findings underline the importance of emotional and contextual factors in memory reconsolidation (a process that Brain-Switch 2.0™ utilizes to deactivate the amygdala triggers), since emotional excitement can improve the probability that changes occur within recovered memory.

Memory Reconsolidation proved to be beneficial in developing interventions that easily facilitate an updating of old brain patterns and integrating new patterns, while being free from the past. For example, by strategically reactivating maladaptive memories within a therapeutic context, professionals can alter the emotional response or context of memory, which leads to a decrease in symptoms for conditions such as posttraumatic stress disorder (PTSD) (Ecker, 2015). Brain-Switch 2.0™ leverages on these concepts, directing the maladaptive memories into current positive reconsolidated memories (Takehara-Nishiuchi, 2021). Wang (2022) postulates that emotional elements significantly influence the reconsolidation process, suggesting that the memory of imbued memory of positive emotions can lead to more effective memory incorporation during reconsolidation. This dynamic reconsolidation allows the update of memories in response to new experiences or information, ultimately contributing to adaptive learning and behavior. The research further indicates that the reconsolidation of memory

improves the flexibility of cognitive processes, which allows people to adjust their responses to changing environmental stimuli (Dumont et al., 2020).

In the therapeutic contexts, memory reconsolidation has gained prominence, particularly in the treatment of psychological disorders such as posttraumatic stress disorder (PTSD). Many studies reveal that memory reconsolidation is linked to effectiveness in several psychotherapeutic interventions, which underline the potential for modification of memory directed to relieve the symptoms associated with trauma (Lane et al., 2015). The reconsolidation of the traumatic memory protocol (RTM), an evolutionary neurological intervention developed by Dr. Frank Bourke, is an example of a structured therapeutic approach designed to identify and alter maladaptive memories while integrating sub-modality processes borrowed from Neuro Linguistic Programming (NLP). The evidence suggests that RTM, through its emphasis on the reconsolidation process, effectively reduces the symptoms of the PTSD in veterans, marking a fundamental advance in trauma treatment methodologies (Goldman R. & Fredrick-Keniston, 2020).

Nader (2003) suggests that reconsolidation is more advantageous when combined with therapeutic techniques aimed at altering emotional responses to traumatic memories. One such process is Brain-switch 2.0™ - the process facilitates the reprocessing of traumatic memories and causing relief of symptoms for the people who suffer from PTSD (Elsey, J.W. & Kindt, M. 2017). Ecker and Vaz (2022) further suggest that approaches that emphasize emotional processing – reactivating memories in a safe and supportive context, memories can be reconsolidated with healthier emotional responses.

In summary, the role of the reconsolidation of memories in the treatment and recovery of trauma represents a change in transformative paradigm in understanding trauma treatment and emotional-based issues and disorders. Current research continues to underline the therapeutic benefits of memory reconsolidation for clinical practice. Future studies must expand to deconstruct the complexities of this process while offering innovative and effective interventions to improve patient results (Kida, 2019; Monfils and Holmes, 2018).

Chapter 3: Data and methodology

3.1. Research aims and approach

The research aim is to establish the clinical efficacy of Brain-Switch 2.0™ to address trauma and emotion-based issues within one to three sessions.

The research approach employs a systematic case analysis of six individual cases who independently contacted Neuro-Therapy Psychotherapy Centre seeking psychotherapeutic interventions for issues related to trauma and/or emotional dysregulation issues – depression, anxiety, self-harm and stress etc. The use of validated assessment tools such as the International Trauma Questionnaire (ITQ), Public Health Questionnaire-9 (PHQ-9), General Anxiety Disorder-7 (GAD-7), Depression, Anxiety, Stress Scale-21 (DASS21) and Clinical Q are administered at the pre and post intervention stages, and the results are evaluated one month after completion of the last Brain-Switch 2.0™ session.

The depression anxiety stress scale (DASS-21) is a psychometric instrument designed to evaluate the emotional states of depression, anxiety and stress. Initially developed by Lovibond and Lovibond (1995), it includes three different components that facilitate the identification of psychological anguish (Scholten et al., 2017). The main advantage of the DASS-21 is its psychometric reliability shown in numerous studies. Coker, Coker and Sanni (2018) examined the psychometric properties of the DASS-21 and reported a high internal consistency, with the Alpha values of Cronbach. Lee (2019) established that the scale presents a strong convergent validity with other established measures, such as Beck's inventory. Lee's study further confirmed that the DASS-21 strictly aligns with consolidated psychological constructs, as a valid measure to detect the underlying mental health disorders. For the purpose of this research, only the stress component will be tabulated for analysis.

The International Trauma Questionnaire (ITQ) is a self-report diagnostic measure of post-traumatic stress disorder (PTSD) and complex PTSD (cPTSD), as defined in the 11th version of the International Classification of Diseases (ICD-11). The ITQ is a brief, clearly worded tool, focusing only on the core features of PTSD and complex PTSD. The ITQ was developed to be consistent with the organizing principles of the International Classification of Diseases -11 (ICD-11), as set forth by the World Health Organization, which aims to maximize clinical utility and international applicability through a focus on the core symptoms of a given disorder.

The PHQ-9 is a widely used instrument to assess and evaluate depression, particularly in public health contexts. Its structure consists of nine questions based on the diagnostic criteria for the larger depressive disorder, allows simple administration and scoring, making it appropriate for various populations (Levis, Benedetti and Thombs, 2019) and easily adapted to meet specific cultural and linguistic needs (Woldetensay et al., 2018). Beard et al. (2016) conducted a study that involved a psychiatric sample and discovered that the PHQ-9 exhibited excellent internal consistency, corroborating its reliability as the major depressive disorder is diagnosed. Manea, Gilbody and McMillan (2015) conducted a meta-analysis and confirmed the effectiveness of PHQ-9 as a screening tool, establishing its usefulness in clinical environments. Furthermore, the systematic review of Carroll et al. (2020) solidified even more these findings when examining the performance of the PHQ-9 in environments with limited resources,

demonstrating that the questionnaire maintains robust psychometric properties in different cultural environments

Generalized anxiety disorder (GAD-7) is a widely used evaluation tool used to identify and measure the severity of the symptoms of generalized anxiety disorder (GAD). It has seven questions that evaluate the symptoms of anxiety experienced in the last two weeks. Plummer et al. (2016) conducted a systematic review and a diagnostic meta-analysis, concluding that the GAD-7 has good diagnostic validity compared to structured clinical interviews, with a sensitivity of 89% and a specificity of 82% to a cut-off score of 10. In addition, Casares et al., (2024) validated the use of GAD-7 in various populations, including teenagers, demonstrating its effectiveness in screening anxiety.

One main reason for the use of Clinical Q is its ability to identiy neuromarker in the area relevant to this research. The advantage of Clinical Q as a diagnostic tool is its ability to provide objective and quantifiable data that can increase clinical evaluations. Traditional diagnostic methods, such as clinical interviews and self-assessment questionnaires, can be subjective and vary widely between practitioners (Yoder, 2020). On the contrary, Clinical Q allows standardized measurements of brain electricity, offering reliable biomarkers related to mental health conditions. The Clinical Q, developed by Dr. Paul Swingle, represents a significant advancement in the application of electroencephalogram (EEG) based methodologies to improve mental health assessment and treatment. This approach to neurotherapy integrates quantitative EEG (qEEG) assessments to inform and adapt treatment strategies. Swingle (2016) emphasizes the importance of understanding neurological brain dynamics as the basis for therapeutic interventions, which increases the effectiveness of the clinician in practice. The integration of clinical Q not only facilitates more accurate diagnoses, but also promotes individualized treatment plans, leading to better patient results (Swingle, 2015). The strength of the Clinical Q is in its ability to identify brainwave markers for trauma, severe emotional stress and emotional dysregulation. These markers will be evaluated pre/post treatment.

3.1.1 The Brain-Switch 2.0™ process

Brain-Switch 2.0™ is a brief therapy treatment that is often completed in three sessions or fewer (Lee, 2024). It is a new approach to the treatment of trauma and emotion-based issues, rooted in the sub-modality sensory processes of Neuro-Linguistic Programming (NLP) and leverages on the research findings of the memory reconsolidation model for the modification of long-term memory (Gray & Bourke, 2015; Gray & Liotta, 2012). The intervention is non-traumatizing, content -free and does not require the client to “confront” their traumatic or emotionally triggering experiences / memories. A brief activation and quickly disrupted recall is used to render the memory to change. Debiec et al. (2002) reinforce the idea that each access to the memory renders the association labile, subjecting the memory to change. Van der Heijden et al. (2024) further explored the reactivation of targeted memory as a powerful treatment paradigm, improving therapeutic results in individuals with PTSD.

The procedure guides the client through a series of shifting the visual, auditory and visceral feelings of the old maladaptive memory/memories that are designed to change the internal perspective from which the memory is recalled. These changes in the perceptual structure of the memory are believed to change its emotional intensity. Kindt et al. (2009) in their research discovered that when memories are reactivated, the individual will encounter new

information which allows the actual content of the memory to be modified or even erased. Simply put, by changing the perceptual structure of the maladaptive memories, the memory can be reconsolidated with an updated memory, with the emotional intensity lowered or completely dissolved.

After treatment, the memory remains accessible but does not evoke traumatic emotional responses (Lee, 2024). A brief description of the intervention can be found in Table 1.

Table 1: **The Brain-Switch 2.0™ Process Outline**

1. The client is invited to check with oneself to elicit an internal agreement to change.
2. The client is guided through a process to create a preferred achievable visual image of self-one that is free from the issues.
3. The client is guided to focus squarely in-front, keeping the eyes transfixed in the middle.
4. The subject is guided to mentally create an old dirty smelly trash bin on the right side / right hemisphere.
5. The client is guided to recall the beginning and ending of all the traumatic visual memories only, like two bookends of the event. This is done internally, and no narration is required. All the visuals are then mentally discarded into the trash bin.
6. The same process is then repeated for all the auditory sounds followed by all the visceral feelings.
8. The client is guided to brain-switch the trash bin from the right to the left side/hemisphere while the eyes remain transfixed in the middle.
9. The client is guided to destroy all the content and the trash bin.
10. The client is guided through the construction a priceless treasure chest on the left side/hemisphere.
11. The client is first guided to deposit two or three beliefs into the treasure chest – "belief that the issue is all over", "the belief that it is not his/her fault", "belief that he/she can take back control of his/her life".
12. The client is then instructed to deposit all their hopes, dreams, values, resilience into the treasure chest. Finally, the preferred visual self is also deposited into the treasure chest.
13. The client is guided to do the second brain-switch by moving the treasure chest from the left to the right.
14. The client is guided to imagine all the content from the treasure chest connect.
15. The memory reconsolidation is tested-the client is asked to think of the triggers / memories/ events and notice what changed.

When the trauma or emotion-based issue cannot be evoked and the narrative can be told without significant autonomic arousal, the desired outcome has been achieved.

3.2. Research Design

The research design will adopt a mixed-methods approach, a significant choice that integrates both qualitative self-reporting of how the subjects experience themselves pre and

post intervention combined with the quantitative methodology via the Clinical Q. This approach is crucial as it allows for a holistic understanding of the phenomenon by capturing both the richness of subjective experiences and the empirical data to support and complement the individual case narrative and experiences.

The research process will be the actual process of what happens in the therapeutic room. As the selection is unsolicited, there will be unbiased treatment as clients with emotional dysregulation will automatically be included and introduced to Brain-Switch 2.0 ™ as the default intervention method. The first contact is via the phone requesting therapeutic intervention for their emotional and/or mental issues. Once there is a self-report of active emotional dysregulation, they will be given the ITQ, PHQ-9, GAD-7, DASS -21 to complete. This will represent the pre-intervention data.

When the client comes in for the first in-person session, the Clinical Q quantitative assessment is conducted. Raw brainwave data are collated and then analysed after the therapy session. This will serve as pre-intervention data.

The Brain-Switch 2.0™ intervention will proceed after the Clinical Q assessment. Like any actual interventions, some clients do not have the luxury of time to attend three weekly sessions. Some will receive three Brain-Switch 2.0™ sessions back-to-back on the same day or spread out within a few hours in the same day to facilitate effective memory reconsolidation or weekly sessions – all dependent on the availability of the client within the same day/ same session or severity of the emotional dysregulation as how it will be in the actual clinical setting. The six case studies will illustrate the flexibility of the protocol.

One month after the last Brain-Switch 2.0™ session, another ITQ, PHQ-9, GAD-7, DASS -21 assessment and Clinical Q will be administered for comparison with the pre intervention scores. The data collected will represent the post-intervention data. The pre and post data will then be compared and analysed to assess for the changes.

3.3. Population

The selection of the six individuals (n= 3 females; n=3 males) were selected naturally when they independently without any solicitation contact Neuro-Therapy Psychotherapy Centre with self-reports of experiencing “active trauma and mental health symptoms” and affecting their daily functioning. The criteria for selecting participants that were selected consisted of their demographic diversity, specific clinical conditions and the potential impact of intervention on their quality of life. An understanding of these factors is crucial for the development of direct interventions that can optimize therapeutic results. The justification for the selection of specific clinical populations is equally significant as it facilitates prioritizing individuals with conditions relevant to the research and advancement of the approach to intervention.

3.4. Sample

To ensure equal representation, six individuals were selected (n=3 females; n=3 males) when they contacted the Neuro-Therapy Psychotherapy Centre seeking professional interventions to manage and as a few articulated, ‘hope’ to resolve their symptoms. The average age of the male subjects is 45.3 and the average age of the females is 42.3 years old.

3.5. Data collection

The data collection was done by administering the ITQ, PHQ-9, GAD-7, DASS-21 and Clinical Q to all six individuals before the Brain-Switch 2.0™ intervention and one month after the end of the intervention which is between one to three sessions. The International Trauma Questionnaire (ITQ) is an instrument used in the evaluation of trauma-related disorders, particularly in alignment with the International Disease Classification criteria (ICD-11) for PTSD and complex PTSD. The scoring methodology classifies each symptom on a 0-to-4-point Likert scale, not at all = 0, a little bit = 1, moderately = 2, quite a bit = 3 and extremely = 4.

The PHQ-9 is designed to detect depression and assess its severity. It includes nine questions, each aligned with a specific criterion of the diagnostic and statistical manual of mental disorders (DSM - 5), the PHQ -9 effectively captures the experience of depressive symptoms in the previous two weeks. The self-scoring ranges from 0 to 3 Likert scale, from not at all =0, several days =1, more than half the days =2 and nearly every day =3.

The GAD-7 is designed to measure generalized anxiety disorder, consists of seven elements linked to the main symptoms of anxiety. Its design allows respondents to translate their experiences into quantifiable data, thus serving clinical and research applications. The self-scoring ranges from 0 to 3 Likert scale, from not at all sure = 0, several days = 1, over half the days = 2 and nearly every day =3.

The DASS-21 evaluates three areas: depression, anxiety and stress. For this research, only the ‘stress’ scale data will be tabulated. The DASS-21 consists of 21 elements, with seven dedicated to each area. The self-scoring ranges from 0 to 3 Likert scale, from did not apply to me at all = 0, applied to me to some degree or some of the time = 1, applied to me to a considerable degree or a good part of time = 2 and applied to me very much or most of the time =3.

The assessment methodology used in the Clinical Q incorporates quantitative electroencephalogram (qEEG) to evaluate the electrical activity of the brain, allowing professionals to identify specific neurological patterns related to psychological conditions (Swingle & Swingle, 2015). The assessment framework captures brain wave patterns for trauma, severe emotional stress, depression and anxiety at specific locations on the scalp.

The Cz location (in the context of Clinical Q and the 10-20 system, "Cz" refers to the midline central electrode position, located at the vertex of the head, equidistant from the frontal, posterior, and lateral regions) is to assess for severe emotional stress neuro marker. Any values below 30 (technically known as the remarkable ranges) will denote positive for severe emotional stress; O1 location (O1 refers to an electrode placement site located over the left occipital lobe (or visual cortex); O1 stands for occipital, and the "1" indicates that it's on the left side of the head) is to assess for neuro markers related to trauma and any values below 50 will denote presence of trauma; F4 (F4 indicates an electrode placement location in the right frontal lobe of the brain, specifically on the right side of the forehead) is the location of emotions and any values of 15% and more at the Theta, Alpha and Beta frequencies higher that F3 denotes emotional volatily, emotional dysregulation and predisposition to depression.

A post data collection of all the assessments used (ITQ, PHQ-9, GAD-7, DASS-21 and Clinical Q) before interventions will be administered once again at the one-month mark, post intervention. This is to facilitate the data analysis of the efficacy of the intervention.

The six individuals will also be asked to reflect on how they are now in relation to the issue that affected them before the intervention. This will represent the narrative – qualitative component of the research.

Chapter 4: Contents and results

The data collected will be presented independently in each individual case study and it will be analyzed and compared based on the complaints / issues presented. The data collected will look for any significant changes at pre-and-post intervention scores and values and analysis of the self-descriptions of the experience post intervention. The outcome will be summarized in tabular forms for easy reference and analysis. (**Refer to Appendix 1 for a summary of the pre and post data for all six case studies**)

4.1 Case study 1

This case study presents the case of a married 46-year-old woman, a professional, presenting with extreme anxiety, self-loathing, negtive self-image and with a strong believe that she is not good in anything. She reported to be experiencing high levels of anxiety, depression, self-doubt and constantly questioning her credibility. She has persistent negative thoughts with occasional suicidal ideation. There was no history of any psychiatric disorders and no history of self-harm. She highlighted recent obsession with buying cryptocurrencies with the irrational belief that she will be happy when she is financially secure with her investments. She complained about a lack of focus and wants to eliminate persistent negative thoughts.

She describes experiencing chronic anxiety and difficulty maintaining focus, which interferes with both her professional and personal life. She expresses an overwhelming sense of not being competent in all aspect of her life, reinforcing patterns of self-criticism and emotional dysregulation. These cognitive distortions contribute to an ongoing struggle with self-perception and self-worth.

One observation is her recent preoccupation with cryptocurrency investments, which she views as a means of achieving financial security and, consequently, personal happiness. This obsession suggests an attempt to compensate for her underlying emotional distress through external means, potentially indicative of maladaptive coping mechanisms. Her strong belief that financial success will resolve her emotional difficulties highlights the role of irrational thought patterns in her emotional dysregulation.

Despite the absence of a formal psychiatric diagnosis, her symptomatology aligns with traits commonly associated with anxiety disorders and depressive states. The combination of excessive self-doubt, negative self-perception, and obsessive-compulsive financial behaviours suggests some form of mental disorder.

The psychological assessment was conducted through standardized diagnostic tools, revealing mental health concerns. The International Trauma Questionnaire (ITQ) results indicated that she did not meet the diagnostic criteria for Post-Traumatic Stress Disorder (PTSD) but met the Complex PTSD diagnostic criteria. The Patient Health Questionnaire (PHQ-9) score was 19, suggesting the presence of depression. Similarly, the Generalized Anxiety Disorder (GAD-7) assessment generated a score of 8, not meeting the criteria for anxiety. The Depression, Anxiety, and Stress Scale (DASS-21) stress scale score was 16, which did not meet the threshold for clinical stress.

Further analysis of PTSD-specific measures showed a PTSD assessment score of 16, not meeting the post-traumatic stress criteria. Additionally, her complex PTSD assessment score was 17, indicating disturbances in self-organization, such as experiencing affective dysregulation, negative self-concept, and interpersonal difficulties. These findings suggest that prolonged exposure to emotional and psychological distress within a hierarchical structure has contributed to her mental health struggles.

The Clinical Q assessment provided valuable quantitative data into her neurological state, particularly in relation to emotional stress and trauma. The evaluation at the Cz location recorded a value of -12, which is significantly below the normative range, indicating the presence of severe emotional stress. This finding suggests heightened dysregulation in brain activity, often associated with prolonged psychological distress and chronic emotional strain.

At the O1 location, the assessment recorded a value of 81, which is indicative of the absence of any trauma-related neural patterns.

Conversely, the values recorded at the F4 location suggest relatively stable brain activity. The Theta brainwave value was 12.5, Alpha at -4, and Beta at 4, all of which fall within a healthy normative range. These values indicate preserved executive functioning and cognitive control in this region, suggesting that despite the emotional and trauma-related challenges, she can retain the capacity for rational decision-making and cognitive regulation. The major finding from the Clinical Q assessment highlights a complex neurological profile, characterized by severe emotional stress alongside areas of relative cognitive stability.

Three weekly sessions of Brain-Switch 2.0™ interventions were conducted to address her ongoing emotional distress and cognitive dysregulation. Notably, a distinct observation emerged during the intervention process, specifically in Step 9 **(refer to Table 1)** of the Brain-Switch 2.0™ protocol, where she demonstrated an increased speed and effectiveness in creatively imagining the destruction of the contents and the bin. This shift suggests a significant change in cognitive processing, potentially reflecting enhanced emotional regulation and a more adaptive approach to managing distressing thoughts. The participant's ability to engage more effectively with the intervention indicates a positive response to the Brain-Switch 2.0™ methodology.

The efficacy of the three sessions interventions were assessed by comparing pre- and post-intervention values across various psychological measures, which are detailed in Tables 2, 3, 4, 5, and 6. These tables present the values before intervention and one month after the three Brain-Switch 2.0™ sessions, providing quantitative evidence of any improvements or changes in her psychological functioning. The data suggests a noticeable reduction in symptoms of anxiety, depression, and self-doubt, as well as improvements in focus and emotional regulation.

Timing	PHQ-9 Desired>9	Anxiety (GAD-7) Desired>9	Stress (DASS-21) Desired>19
Before Brain-Switch 2.0™	19	8	16
One month after last session	4	0	2

TABLE 2: Assessment of PHQ-9, GAD-7 and DASS-21 before and after Brain-Switch 2.0™ therapeutic intervention

PHQ-9: Patient Health Questionnaire; GAD-7: General Anxiety Disorder-7; DASS-21: Depression and Anxiety Stress Scale

Timing	PTSD assessment	CPTSD assessment	PTSD Score	DSO Score
Before Brain-Switch 2.0™	Not met	Met	6	17
One month after last session	Not met	Not met	1	6

TABLE 3: Trauma assessment before and after Brain-Switch 2.0™ therapeutic intervention

PTSD: post-traumatic stress disorder; CPTSD: complex PTSD; DSO: disturbance in self-organization; ITQ: International Trauma Questionnaire

PTSD/CPTSD/DSO were assessed using ITQ

TABLE 4: PTSD Scores

Symptom cluster/Scale	Pre	Post
Re-experiencing in the here and now (Re)	2	0
Avoidance (Av)	2	1
Sense of current threat (Th)	2	0
PTSD score	6	1

TABLE 5: CPTSD Scores

Symptom cluster/Scale	Pre	Post
Affective dysregulation (AD)	5	2
Negative self-concept (NSC)	6	2
Disturbances in relationships (DR)	6	2
DSO score	17	6

The initial Clinical Q assessment indicated that she was experiencing severe emotional stress as the main driver to her describing her anxiety, sense of failure and poor sense of self. The results are highlighted in Table 6.

Timing	Cz-Alpha Response Desired<30	O1-Alpha Response Desired<50	F4-Theta Desired>15	F4-Alpha Desired>15	F4-Beta Desired>15
Before Brain-Switch 2.0™	-12	81	12.5	-4	4
One month after last Brain-Switch 2.0™ session	46	102	14	11	14

TABLE 6: Clinical Q Brainwave assessment before and after Brain-Switch 2.0™ therapeutic intervention

Cz-Alpha Response: Severe Emotional Stress; O1-Alpha Response: Trauma Marker; F4 Theta: Emotional volatility; F4 Alpha: Emotional dysregulation; F4 Beta: Predisposition to depressed mood states

Cz/O1/F4 locations were assessed using the Clinical Q Protocol

The post Clinical Q results indicate a clinically significant change in her mental wellness. The Clinical Q Alpha Response at the Cz site significantly increased from the pre-Brain-Switch 2.0™ intervention of value (minus) -12 and increased to 46. This indicates that neurologically, she is not experiencing any severe emotional stress. The brain had rewired itself. Another pleasant outcome was that the values of the Alpha Response at O1 increased from 81 to 102. This reflects the brains' ability to access internal resources easier.

While the F4 values at Theta, Alpha and Beta went up, it is still withing the normative ranges. No indication of being emotionally overwhelmed or dysregulated.

The PHQ – 9 scores decreased from 19 to four, indicating that the earlier complains of depression has been addressed and symptoms improved. The GAD-7 scores for Anxiety from the initial value of eight decreased to zero, again indicating a significant positive change. The DASS-21 for stress score decreased from 16 to two. This significantly indicates the effectiveness of the intervention on her mental health wellness.

The active symptoms on the disturbance in self-organization (DSO) scores significantly decreased from 17 to six. Similarly, her internal experiences of affective dysregulation (AD) decreased from five to two; negative self-concepts (NSC) decreased from six to two and disturbances in relationships (DR) decreased from six to two.

4.2 Case study 2

This case study presents the case of a 60-year-old man, a fully professed member of a Catholic religious order /community for over 30 years, presenting with active episodes to being belittled and made to feel that he is not good enough by his superior and rector. He reported feeling angry, victimized and frustrated but due to his vow of obedience, he learnt to control himself and not speak back and to remain calm outwardly while internally experiencing a deep-seated sense of injustice, mistreatment and anger.

The psychological assessment was conducted through standardized diagnostic tools, revealing significant mental health concerns. The International Trauma Questionnaire (ITQ) results indicated that he met the diagnostic criteria for both Post-Traumatic Stress Disorder (PTSD) and complex PTSD. His Patient Health Questionnaire (PHQ-9) score was 10, suggesting the presence of depression. Similarly, his Generalized Anxiety Disorder (GAD-7) assessment generated a score of 11, meeting the criteria for anxiety. However, his Depression, Anxiety, and Stress Scale (DASS-21) stress score was 16, which did not meet the threshold for clinical stress.

Further analysis of PTSD-specific measures showed a PTSD assessment score of 13, confirming the presence of post-traumatic stress symptoms. Additionally, his complex PTSD assessment score was 12, indicating disturbances in self-organization, such as experiencing affective dysregulation, negative self-concept, and interpersonal difficulties. These findings suggest that prolonged exposure to psychological distress within a hierarchical structure has contributed to his mental health struggles.

The Clinical Q assessment provided valuable quantitative data into his neurological state, particularly in relation to emotional stress and trauma. The evaluation at the Cz location recorded a value of (minus) -6, which is significantly below the normative range, indicating the presence of severe emotional stress. This finding suggests heightened dysregulation in brain activity, often associated with prolonged psychological distress and chronic emotional strain.

At the O1 location, the assessment recorded a value of 13, which is indicative of trauma-related neural patterns. Values of 50 and below in this region are commonly associated with hypervigilance and increased sensitivity to stressors, aligning with the reported experiences of prolonged emotional distress within his environment. This finding further supports the presence of neurological trauma markers.

Conversely, the values recorded at the F4 location suggest relatively stable brain activity. The Theta brainwave value was at -1, Alpha at -5, and Beta at 10, all of which fall within a healthy range. These values indicate preserved executive functioning and cognitive control in this region, suggesting that despite the emotional and trauma-related challenges, he is able to retain the capacity for rational decision-making and cognitive regulation. The Clinical Q findings highlight a complex neurological profile, characterized by severe emotional stress and trauma markers alongside areas of relative cognitive stability.

Given the daily occurrence of emotional and psychological intimidation, an intensive intervention approach was assessed as necessary. As a result, three Brain-Switch 2.0™ interventions were conducted within a single session to enhance self-regulation and mitigate the distress as seen from the Clinical Q findings. This intensive application aimed to facilitate a more rapid and effective neuro-emotional shift, promoting resilience and emotional stabilization.

A notable observation during the intervention process was the increased speed of the discarding process in Step 2 following the first Brain-Switch 2.0™ session. The first Brain-Switch 2.0™ discarding process was 15 minutes whereas the second and third took 5 minutes and 1 minutes respectively. This observation suggests the hypothesis that multiple Brain-Switch 2.0™ applications within a single session may accelerate neural adaptability and emotional recalibration. (Please refer to Appendix 7 for the complete six step protocol)

The efficacy of this approach was further assessed through a comparison of pre and post-intervention score across multiple measures, as presented in Tables 7, 8, 9, 10, and 11.

Timing	PHQ-9 Desired>9	Anxiety (GAD-7) Desired>9	Stress (DASS-21) Desired>25
Before Brain-Switch 2.0™	10	11	16
One month after last session	3	3	3

TABLE 7: Assessment of PHQ-9, GAD-7 and DASS-21 before and after Brain-Switch 2.0™ therapeutic intervention

PHQ-9: Patient Health Questionnaire; GAD-7: General Anxiety Disorder-7; DASS-21: Depression and Anxiety Stress Scale

Timing	PTSD assessment	CPTSD assessment	PTSD Score	DSO Score
Before Brain-Switch 2.0™	Met	Met	13	12
One month after last session	Not met	Not met	0	0

TABLE 8: Trauma assessment before and after Brain-Switch 2.0™ therapeutic intervention

PTSD: post-traumatic stress disorder; CPTSD: complex PTSD; DSO: disturbance in self-organization; ITQ: International Trauma Questionnaire

PTSD/CPTSD/DSO were assessed using ITQ

TABLE 9: PTSD Scores

Symptom cluster/Scale	Pre	Post
Re-experiencing in the here and now (Re)	5	0
Avoidance (Av)	4	0
Sense of current threat (Th)	4	0
PTSD score	13	0

TABLE 10: CPTSD Scores

Symptom cluster/Scale	Pre	Post
Affective dysregulation (AD)	5	0
Negative self-concept (NSC)	2	0
Disturbances in relationships (DR)	5	0
DSO score	12	0

Timing	Cz-Alpha Response Desired<30	O1-Alpha Response Desired<50	F4-Theta Desired>15	F4-Alpha Desired>15	F4-Beta Desired>15
Before Brain-Switch 2.0™	-6	13	-1	-5	10
One month after last Brain-Switch 2.0™ session	10	52	6	9	11

TABLE 11: Clinical Q Brainwave assessment before and after Brain-Switch 2.0™ therapeutic intervention

Cz-Alpha Response: Severe Emotional Stress; O1-Alpha Response: Trauma Marker; F4 Theta: Emotional volatility; F4 Alpha: Emotional dysregulation; F4 Beta: Predisposition to depressed mood states

Cz/O1/F4 locations were assessed using the Clinical Q Protocol

The post Clinical Q results indicate a change in his mental wellness. The Clinical Q Alpha Response at the Cz site increased from the pre-Brain-Switch 2.0™ intervention value (minus) -6 to 10. This signifies that neurologically, there is improvement and further session/s

is/are needed to lower the exposure emotional stress. Another positive outcome was that the values of the Alpha Response at O1 increased from 13 to 52. This indicates that the neurological marker for trauma has been resolved and his sense of self and ability to take reference from his history has emerged.

While the F4 values at Theta, Alpha and Beta went up, they are still within the normative ranges. No indication of being emotionally overwhelmed or dysregulated. Theta increased from -1 to 6, Alpha increased from -5 to 9 and Beta increased from 10 to 11.

The PHQ- 9 scores decreased from 10 to three, indicating that the earlier complains of depression has been addressed and lowered. The GAD-7 scores for Anxiety from the initial value of 11 decreased to three, indicating a significant positive change, negative for anxiety. DASS-21 for stress score decreased from 16 to three. This significantly indicates the effectiveness of the intervention on his mental health wellness.

The active symptoms of the disturbance in self-organization (DSO) scores significantly decreased from 12 to zero. Similarly, his internal experiences of affective dysregulation (AD) decreased from five to zero; negative self-concepts (NSC) decreased from two to zero and disturbances in relationships (DR) decreased from five to zero. He articulated strongly that he likes what he is doing now and has found renewed meaning leaving in community. He described his past and current situation as ‘neutral’, and he can continue to be his authentic self not needing to be like the others in the community.

4.3 Case study 3

This case study examines a 26-year-old single female professional, working within the criminal justice system, presenting with persistent stress and emotional dysregulation. She reports experiencing significant distress at the end of each workday, often manifesting as crying episodes and feelings of inadequacy in fulfilling her professional responsibilities. Her concerns are exacerbated by a long history of domestic violence and unstable housing throughout her adolescence, which have contributed to ongoing emotional insecurity and self-doubt.

She expresses a pervasive sense of being unqualified for her role within the criminal legal system, frequently engaging in self-comparisons with her peers. She perceives herself as a poor performer and experiences heightened anxiety over her professional competence. Additionally, she reports needing a strong reliance and dependence on her supervisor for guidance, further reinforcing her feelings of inadequacy. This pattern of self-doubt and external validation-seeking suggests underlying challenges related to self-efficacy and professional confidence.

Given the high-stress nature of her work environment and her personal history of being abandoned, this case highlights the potential impact of early-life instability affecting her daily workplace functioning as an adult.

The psychological assessment was conducted through standardized diagnostic tools, revealing some mental health concerns. The International Trauma Questionnaire (ITQ) results indicated that she did not meet the diagnostic criteria for Post-Traumatic Stress Disorder

(PTSD) but met the criteria for complex PTSD. The Patient Health Questionnaire (PHQ-9) score was 10, suggesting the presence of depression. Similarly, her Generalized Anxiety Disorder (GAD-7) assessment indicated a score of 18, meeting the criteria for anxiety. However, her Depression, Anxiety, and Stress Scale (DASS-21) stress score was 22, which did not meet the threshold for clinical stress.

Further analysis of PTSD-specific measures showed a PTSD assessment score of 12, confirming the absence of post-traumatic stress symptoms. The complex PTSD assessment score was 22, indicating disturbances in self-organization, such as experiencing affective dysregulation, negative self-concept, and interpersonal difficulties. These findings suggest that prolonged exposure to psychological distress within a hierarchical structure has contributed to her mental health struggles.

The Clinical Q assessment provided valuable quantitative data into her neurological state, particularly in relation to emotional stress and trauma. The evaluation at the Cz location recorded a value of 26, which is significantly below the expected range, indicating the presence of severe emotional stress. This finding suggests heightened dysregulation in brain activity, often associated with prolonged psychological distress and chronic emotional strain.

At the O1 location, the assessment recorded a value of 48, which is indicative of trauma-related neural patterns. Values below 50 in this region are commonly associated with hypervigilance and increased sensitivity to stressors, aligning with the participant's reported experiences of prolonged emotional distress within her work environment. This finding further supports the presence of trauma symptoms.

Conversely, the values recorded at the F4 location suggest relatively stable brain activity. The Theta brainwave value was at -17, Alpha at -10, and Beta at -0.2, all of which fall within a healthy range. These values indicate preserved executive functioning and cognitive control in this region, suggesting that despite the emotional and trauma-related challenges, the participant retains the capacity for rational decision-making and cognitive regulation. The Clinical Q findings highlight a complex neurological profile, characterized by severe emotional stress and trauma markers alongside areas of relative cognitive stability.

Given the past history of domestic violence and her inability to adequately regulate herself in her high stress work environment, an intensive intervention approach was assessed as the most effective way to intervene. As a result, three Brain-Switch 2.0™ interventions were conducted within a single session to enhance self-regulation and mitigate the distress as seen from the Clinical Q findings. This intensive application aimed to facilitate a more rapid and effective neuro-emotional shift, promoting resilience and emotional stabilization.

The efficacy of this approach was further assessed through a comparison of pre- and post-intervention score across multiple measures, as presented in Tables 12, 13, 14, 15, 16 and 17.

Timing	PHQ-9 Desired>9	Anxiety (GAD-7) Desired>9	Stress (DASS-21) Desired>25
Before Brain-Switch 2.0™	10	18	22
One month after last session	5	7	5

TABLE 12: Assessment of PHQ-9, GAD-7 and DASS-21 before and after Brain-Switch 2.0™ therapeutic intervention

PHQ-9: Patient Health Questionnaire; GAD-7: General Anxiety Disorder-7; DASS-21: Depression and Anxiety Stress Scale

Timing	PTSD assessment	CPTSD assessment	PTSD Score	DSO Score
Before Brain-Switch 2.0™	Not met	Met	12	21
One month after last session	Not met	Not met	4	7

TABLE 13: Trauma assessment before and after Brain-Switch 2.0™ therapeutic intervention

PTSD: post-traumatic stress disorder; CPTSD: complex PTSD; DSO: disturbance in self-organization; ITQ: International Trauma Questionnaire

PTSD/CPTSD/DSO were assessed using ITQ

TABLE 14: PTSD Scores

Symptom cluster/Scale	Pre-Scoring	Post - Scoring
Re-experiencing in the here and now (Re)	2	0
Avoidance (Av)	3	0
Sense of current threat (Th)	7	4
PTSD score	12	4

TABLE 15: CPTSD Scores

Symptom cluster/Scale	Pre	Post
Affective dysregulation (AD)	7	1
Negative self-concept (NSC)	7	4
Disturbances in relationships (DR)	7	2
DSO score	21	7

Timing	Cz-Alpha Response Desired<30	O1-Alpha Response Desired<50	F4-Theta Desired>15	F4-Alpha Desired>15	F4-Beta Desired>15
Before Brain-Switch 2.0™	26	48	-17	-10	-0.2
One month after last Brain-Switch 2.0™ session	39	61	5	5	5

TABLE 16: Clinical Q Brainwave assessment before and after Brain-Switch 2.0™ therapeutic intervention

Cz-Alpha Response: Severe Emotional Stress; O1-Alpha Response: Trauma Marker; F4 Theta: Emotional volatility; F4 Alpha: Emotional dysregulation; F4 Beta: Predisposition to depressed mood states

Cz/O1/F4 locations were assessed using the Clinical Q Protocol

The post Clinical Q results indicate an improvement in her mental wellness. The Clinical Q Alpha Response at the Cz site increased from the pre-Brain-Switch 2.0™ intervention of value 26 to 39. This signifies that neurologically, she is not experiencing any severe emotional stress. The brain had rewired itself. Another positive outcome was that the values of the Alpha Response at O1 increased from 48 to 61. This in a marker that the trauma has been dissolved.

While the F4 values at Theta, Alpha and Beta went up, they are still within the normative ranges. No indication of being emotionally overwhelmed or dysregulated. Theta increased from -17 to 5, Alpha increased from -10 to 5 and Beta increased from -0.2 to 5.

The PHQ – 9 scores decreased from 10 to five, indicating that the earlier complains of depression has been addressed and lowered. The GAD-7 scores for Anxiety from the initial value of 18 decreased to seven, indicating a significant positive change, negative for anxiety. DASS-21 for stress scores decreased from 22 to five. This significantly indicates the effectiveness of the intervention on her mental health wellness.

The active symptoms of the disturbance in self-organization (DSO) scores significantly decreased from 21 to seven. Similarly, her internal experiences of affective dysregulation (AD) decreased from a seven to one; negative self-concepts (NSC) decreased from seven to four and disturbances in relationships (DR) decreased from seven to two.

4.4 Case study 4

This case study is on a single 26-year-old male financial planner presenting with persistent distress in self-esteem, personal boundary-setting, and poor financial decision-making. He reports significant struggles in asserting himself, particularly in situations involving lending money when asked. He finds it difficult to say no, as if compelled to lend when requested by friends and acquaintances. His inability to establish and maintain firm personal boundaries has led to negative consequences in both his professional and personal life. His mother is diagnosed with schizophrenia, and he was previously (10 years ago) seeking treatment for depression and for having suicidal ideation.

He had a history of substance abuse and was previously involved in illegal drug distribution. Although he no longer engages in these activities, he continues to experience feelings of self-doubt, guilt, and disappointment in himself. He attributes much of his current distress to his deep-seated belief that his self-worth is tied to his ability to give to others, often without considering the personal cost on himself. This behavioral pattern has resulted in severe financial difficulties, with self-reported losses exceeding $20,000 due to excessive lending behaviors which ends up as bad loans which he must write-off, and the friends being uncontactable thereafter.

He reported receiving a professional disciplinary consequence because of his lending money issues. He received a formal written warning from his employer, and his colleagues have begun distancing themselves from him. This professional strain has exacerbated his feelings of inadequacy and emotional distress. In response, he has developed maladaptive coping mechanisms, including staying excessively long hours at work, potentially as a means of compensating for his perceived shortcomings. However, this behavior has not resulted in increased professional validation but has instead contributed to heightened stress and further emotional exhaustion.

His case highlights a complex interplay between self-esteem, financial decision-making, professional functioning and a family history of mental illness. The psychological distress he experiences appears to be reinforced by his difficulty in establishing boundaries, leading to recurring financial instability and strained interpersonal relationships. His belief that his value is contingent upon his generosity suggests a deep-rooted cognitive distortion and insecurity.

The psychological assessment was conducted through standardized diagnostic tools, revealing mental health concerns. The International Trauma Questionnaire (ITQ) results indicated that he did not meet the diagnostic criteria for Post-Traumatic Stress Disorder (PTSD) but met the diagnostic criteria for complex PTSD. The Patient Health Questionnaire (PHQ-9) score was 12, suggesting the presence of depression. Similarly, the Generalized Anxiety Disorder (GAD-7) assessment generated a score of 11, meeting the criteria for anxiety. However, the Depression, Anxiety, and Stress Scale (DASS-21) stress subscale score was 14, which did not meet the threshold for clinical stress.

Further analysis of PTSD-specific measures showed a PTSD assessment score of 14, confirming the absence of post-traumatic stress symptoms. Additionally, his complex PTSD assessment score was 7, indicating disturbances in self-organization, such as experiencing affective dysregulation, negative self-concept, and interpersonal difficulties. These findings

suggest that prolonged exposure to psychological distress within a hierarchical structure has contributed to his mental health struggles.

The Clinical Q assessment provided valuable quantitative data into his neurological state, particularly in relation to emotional stress and trauma. The evaluation at the Cz location recorded a value of 11, which is significantly below the normative range, indicating the presence of severe emotional stress. This finding suggests heightened dysregulation in brain activity, often associated with prolonged psychological distress and chronic emotional strain.

At the O1 location, the assessment recorded a value of 8, which is indicative of trauma-related neural patterns. Values of 50 and below in this region are commonly associated with hypervigilance and increased sensitivity to stressors, aligning with the participant's reported experiences of prolonged emotional distress within his environment. This finding further supports the presence of neurological trauma markers.

Conversely, the values recorded at the F4 location suggest relatively stable brain activity. The Theta brainwave value was at 3, Alpha at -3, and Beta at 3, all of which fall within a healthy range. These values indicate preserved executive functioning and cognitive control in this region, suggesting that despite the emotional and trauma-related challenges, the participant retains the capacity for rational decision-making and cognitive regulation. The Clinical Q findings highlight a complex neurological profile, characterized by severe emotional stress and trauma markers alongside areas of relative cognitive stability.

Given the daily occurrence of emotional and interpersonal work stresses which were affecting his work performance and mental health, an intensive intervention approach was assessed to be the most appropriate. As a result, three Brain-Switch 2.0™ interventions were conducted within a single session to enhance self-regulation and mitigate the distress as seen from the Clinical Q findings. This intensive application aimed to facilitate a more rapid and effective neuro-emotional shift, promoting resilience and emotional stabilization.

The efficacy of this approach was further assessed through a comparison of pre- and post-intervention score across multiple measures, as presented in Tables 17, 18, 19, 20, and 21.

Timing	PHQ-9 Desired>9	Anxiety (GAD-7) Desired>9	Stress (DASS-21) Desired>25
Before Brain-Switch 2.0™	12	11	14
One month after last session	7	8	7

TABLE 17: Assessment of PHQ-9, GAD-7 and DASS-21 before and after Brain-Switch 2.0™ therapeutic intervention

PHQ-9: Patient Health Questionnaire; GAD-7: General Anxiety Disorder-7; DASS-21: Depression and Anxiety Stress Scale

Timing	PTSD assessment	CPTSD assessment	PTSD Score	DSO Score
Before Brain-Switch 2.0™	Not met	Met	14	7
One month after last session	Not met	Not met	6	4

TABLE 18: Trauma assessment before and after Brain-Switch 2.0™ therapeutic intervention

PTSD: post-traumatic stress disorder; CPTSD: complex PTSD; DSO: disturbance in self-organization; ITQ: International Trauma Questionnaire

PTSD/CPTSD/DSO were assessed using ITQ

TABLE 19: PTSD Scores

Symptom cluster/Scale	Pre	Post
Re-experiencing in the here and now (Re)	4	2
Avoidance (Av)	8	3
Sense of current threat (Th)	2	1
PTSD score	14	6

TABLE 20: CPTSD Scores

Symptom cluster/Scale	Pre	Post
Affective dysregulation (AD)	2	1
Negative self-concept (NSC)	3	2
Disturbances in relationships (DR)	2	1
DSO score	7	4

Timing	Cz-Alpha Response Desired<30	O1-Alpha Response Desired<50	F4-Theta Desired>15	F4-Alpha Desired>15	F4-Beta Desired>15
Before Brain-Switch 2.0™	11	8	3	-3	3
One month after last Brain-Switch 2.0™ session	23	52	-4	10	20

TABLE 21: Clinical Q Brainwave assessment before and after Brain-Switch 2.0™ therapeutic intervention

Cz-Alpha Response: Severe Emotional Stress; O1-Alpha Response: Trauma Marker; F4 Theta: Emotional volatility; F4 Alpha: Emotional dysregulation; F4 Beta: Predisposition to depressed mood states

Cz/O1/F4 locations were assessed using the Clinical Q Protocol

The post Clinical Q results indicate a clinically significant improvement in his mental wellness. The Clinical Q Alpha Response at the Cz location significantly improved from the pre-Brain-Switch 2.0™ intervention value of 11 and increased to 23. This signifies that neurologically, his current exposure to severe emotional stress has decreased and require one to two more Brain-Switch 2.0 ™ sessions. The reason for the marker to be present is because

his work environment remains toxic and learning to manage it requires mastering new strategies. The outcome of the value of the Alpha Response at O1 increased from 8 to 52. With this increased, the neurological marker for trauma has been addressed and the trauma dissolved, and the traumatic memory remains as an historical past.

While the F4 values at Theta and Alpha are within the acceptable ranges, the Beta value increased from 10 to 20. This is an indicator for the predisposition to the depressed mood states.

The PHQ- 9 scores decreased from 12 to seven, indicating that the earlier complaints of depression have been addressed and lowered. The GAD-7 scores for Anxiety from the initial value of 11 decreased to eight, again indicating a significant positive change. The DASS-21 for stress score decreased from 14 to seven. This significantly indicates the effectiveness of the intervention on his mental health wellness.

The active symptoms of the disturbance in self-organization (DSO) scores significantly decreased from 7 to four. Similarly, his internal experiences of affective dysregulation (AD) decreased from a two to one; negative self-concept (NSC) decreased from three to two and disturbances in relationships (DR) decreased from two to one.

4.5 Case study 5

This case study is on a married 50-year-old male IT Director presenting with reported extreme emotional dysregulation, characterized by episodes of intense distress and self-harming behaviors. This is his second marriage. He reported a recent incident in which a simple parenting disagreement triggered a severe emotional meltdown, leading to self-harming behaviors, including punching the wall and hitting his head against the wall until the pain became unbearable. He expressed an inability to determine the duration of these episodes or the reason why he acted the way he did. His wife reported that such destructive behaviors typically lasted between 20 to 30 minutes.

He disclosed that these emotional outbursts have been a recurring pattern since childhood. However, as an adult, the most recent episode of dysregulation prior to this incident occurred two years ago, suggesting that while the frequency of these behaviors has decreased over time, the underlying emotional regulation difficulties remain unresolved. Following the recent episode, he reported experiencing profound feelings of depression, shame and self-disappointment.

Clinically, the participant has been diagnosed with Major Depressive Disorder (MDD) and is currently prescribed Desvenlafaxine (PRISTIQ) at a daily dosage of 50 mg extended release. Despite pharmacological treatment, he continues to experience emotional dysregulation and self-harming behaviors, indicating the reactions are involuntary.

His wife (also her second marriage) has expressed considerable concern regarding the impact of his emotional dysregulation on their family, particularly on his eight-year-old stepson from her first marriage, who is diagnosed with autism spectrum disorder (ASD). The presence of such behaviors in the household raises concerns about the potential psychological effects on their child, as exposure to parental emotional instability may contribute to increased stress and

anxiety in children, particularly those with ASD who are more sensitive to environmental disruptions.

The psychological assessment was conducted through standardized diagnostic tools, revealing mental health concerns. The International Trauma Questionnaire (ITQ) results indicated that he did not meet the diagnostic criteria for both Post-Traumatic Stress Disorder (PTSD) and complex PTSD. His Patient Health Questionnaire (PHQ-9) score was 10, suggesting the presence of depression. Similarly, his Generalized Anxiety Disorder (GAD-7) assessment generated a score of 8, not meeting the criteria for anxiety. The Depression, Anxiety, and Stress Scale (DASS-21) stress subscale score was 20, which did not meet the threshold for clinical stress.

Further analysis of PTSD-specific measures showed a PTSD assessment score of 6, confirming the absence of post-traumatic stress symptoms. Additionally, his complex PTSD assessment score was 9, indicating no disturbances in self-organization.

The Clinical Q assessment provided valuable quantitative data into his neurological state, particularly in relation to emotional stress and trauma. The evaluation at the Cz location recorded a value of 62, which is significantly a positive value above the normative range, indicating no presence of severe emotional stress.

At the O1 location, the assessment recorded a high positive value of 209, which is indicative of the absence of any trauma-related neural patterns.

Conversely, the values recorded at the F4 location suggest unstable brain activity in regulating emotions. The Theta brainwave value recorded 26, Alpha at 9, and Beta at 26, in which the Theta and Beta fall within an unhealthy range also known at the remarkable ranges. These values indicate poor executive functioning and poor cognitive control in this region, suggesting the presence of emotional volatility and depression.

Following the extreme and severe episode of emotional dysregulation, which resulted in self-harming behaviors, he reported experiencing significant shame and depressive symptoms. Given the intensity of his distress and its impact on both his emotional stability, potential parenting and marital stresses, an intensive intervention was assessed as the most viable intervention. To facilitate self-regulation and improve impulse control, three Brain-Switch 2.0™ interventions were conducted within a single session. This structured approach aimed to provide immediate cognitive and emotional stabilization to continue to provide parenting care to his stepson.

Additionally, the decision to implement three consecutive interventions within the same session was based on the need for a concentrated targeted therapeutic impact. The intervention targeted maladaptive emotional responses, aiming to enhance self-awareness and reduce impulsive behaviors linked to emotional distress.

The effectiveness of the intervention was assessed through pre- and post-intervention comparisons, as shown in Tables 22, 23, 24, 25, and 26. The results indicate measurable improvements in emotional regulation, supporting the potential efficacy of Brain-Switch 2.0™ as a targeted intervention for individuals experiencing severe emotional dysregulation.

Timing	PHQ-9 Desired>9	Anxiety (GAD-7) Desired>9	Stress (DASS-21) Desired>25
Before Brain-Switch 2.0™	10	8	20
One month after last session	10	5	15

TABLE 22: Assessment of PHQ-9, GAD-7 and DASS-21 before and after Brain-Switch 2.0™ therapeutic intervention

PHQ-9: Patient Health Questionnaire; GAD-7: General Anxiety Disorder-7; DASS-21: Depression and Anxiety Stress Scale

Timing	PTSD assessment	CPTSD assessment	PTSD Score	DSO Score
Before Brain-Switch 2.0™	Not met	Not met	6	9
One month after last session	Not met	Not met	4	7

TABLE 23: Trauma assessment before and after Brain-Switch 2.0™ therapeutic intervention

PTSD: post-traumatic stress disorder; CPTSD: complex PTSD; DSO: disturbance in self-organization; ITQ: International Trauma Questionnaire

PTSD/CPTSD/DSO were assessed using ITQ

TABLE 24: PTSD Scores

Symptom cluster/Scale	Pre	Post
Re-experiencing in the here and now (Re)	2	1
Avoidance (Av)	3	2
Sense of current threat (Th)	1	1
PTSD score	6	4

CPTSD TABLE 25: CPTSD Scores

Symptom cluster/Scale	Pre	Post
Affective dysregulation (AD)	5	3
Negative self-concept (NSC)	0	0
Disturbances in relationships (DR)	4	4
DSO score	9	7

Timing	Cz-Alpha Response Desired<30	O1-Alpha Response Desired<50	F4-Theta Desired>15	F4-Alpha Desired>15	F4-Beta Desired>15
Before Brain-Switch 2.0™	62	209	43	9	26
One month after last Brain-Switch 2.0™ session	45	192	25	9	20

TABLE 26: Clinical Q Brainwave assessment before and after Brain-Switch 2.0™ therapeutic intervention

Cz-Alpha Response: Severe Emotional Stress; O1-Alpha Response: Trauma Marker; F4 Theta: Emotional volatility; F4 Alpha: Emotional dysregulation; F4 Beta: Predisposition to depressed mood states

Cz/O1/F4 locations were assessed using the Clinical Q Protocol

The post Clinical Q results indicate some reliable decreases in the F4 location. The Clinical Q Alpha Response at the Cz site decreased from 62 to 45, but still within the normal ranges. This suggests that neurologically, his current triggers is not linked to the exposure to severe emotional stress. The outcome of the value of the Alpha Response at O1 decreased from 209 to 192, yet still within the higher positive normative range, indicating an absence of trauma.

While the F4 values at Theta and Beta decreased, they remained at the remarkable ranges. Theta decreased from 43 to 25, Beta decreased from 26 to 20. Alpha value remained unchanged at 9. The higher remarkable values of Theta and Beta are an indicator for poor emotional regulation when triggered and the predisposition to the depressed mood states. This suggest that further sessions with Brain-Switch 2.0™ is necessary to regain cognitive and emotional regulation at the F4 location.

The PHQ – 9 score for depression remained unchanged at 10. GAD-7 score for Anxiety decreased from the initial value of eight to five, indicating a significant positive change. The DASS-21 sub-scale for stress score dropped from 20 to 15, indicating the absence of stress.

The active symptoms of the disturbance in self-organization (DSO) scores significantly decreased from nine to seven. Similarly, his internal experiences of affective dysregulation (AD) decreased from five to three; negative self-concept (NSC) remained at zero and disturbances in relationships (DR) remained at four.

The reason for the minimal positive outcomes is attributed to his over-burdened caregiver role also known as caregiver stress, as he is the main caregiver to his stepson who constantly shows disrespect and behaviorally dysregulates whenever he does not get what he wants. It was also later reviewed that he cannot leave his stepson alone because any little thing can cause his stepson to fall into a dysregulated state, which will typically lead to the disruption of things in the house.

4.6 Case study 6

This case study presents the case of a 55-year-old woman, residing in a neighboring country, who is married with two adult children. She works as a schoolteacher, specializing in teaching pre-teens English and Mathematics. She reported experiencing extreme emotional dysregulation, characterized by frequent outbursts of anger followed by periods of emotional and physical exhaustion lasting from several hours to days. She described experiencing regular, severe mood swings, and consistently operating in a hyper-vigilant state, suggesting an ongoing pattern of emotional instability and heightened stress responses.

Upon enquiry about a mildly distracting incident that may have contributed to her emotional dysregulation, she initially paused for five minutes before recounting a deeply distressing experience even when a mildly distressing memory was elicited. She disclosed that she had been sexually abused by her parents as a child until her teenage years. Her parents are still alive, and they expect her to look after them in their old age now. This revelation pointed to significant unresolved trauma, which appears to be a central trigger in her emotional turmoil. Her delay in verbalizing the experience and then choosing to share a major event even when only a mildly distracting incident was asked, reflected the emotional complexity and instability of the disclosure and memory. This reflects the psychological conflict she is experiencing in reconciling her dual roles as both a daughter and a victim. This conflict is compounded by the continued presence of her parents in her life, further complicating her emotional responses and contributing to a sense of cognitive dissonance and emotional dysregulation.

Her narrative highlights the impact of childhood trauma on adult emotional regulation and psychological well-being. Her difficulties in managing emotional fluctuations and anger may be linked to the unresolved trauma of sexual abuse, which has likely disrupted her sense of self and her interpersonal relationships. Furthermore, her hyper-vigilance suggests a heightened state of arousal, commonly associated with trauma-related disorders such as post-traumatic stress disorder (PTSD) and complex PTSD, where individuals remain on high alert due to past traumatic experiences.

Her ongoing emotional dysregulation and conflicting feelings toward her parents highlight the need for therapeutic intervention focused on trauma resolution, emotional regulation, and cognitive restructuring.

The psychological assessment was conducted through standardized diagnostic tools, revealed significant mental health concerns. The International Trauma Questionnaire (ITQ) results indicated that she met the diagnostic criteria for both Post-Traumatic Stress Disorder (PTSD) and complex PTSD. Her Patient Health Questionnaire (PHQ-9) score was 11, suggesting the presence of depression. Similarly, her Generalized Anxiety Disorder (GAD-7) assessment generated a score of 15, meeting the criteria for anxiety. The Depression, Anxiety, and Stress Scale (DASS-21) stress subscale score was 40, meeting the threshold for clinical stress.

Further analysis of PTSD-specific measures showed a PTSD assessment score of 15, meeting the post-traumatic stress criteria. Additionally, her complex PTSD assessment score was 18, indicating disturbances in self-organization, such as experiencing affective dysregulation, negative self-concept, and interpersonal difficulties. These findings suggest that prolonged exposure to emotional and psychological distress within a hierarchical structure has contributed to her mental health struggles.

The Clinical Q assessment provided valuable quantitative data into his neurological state, particularly in relation to emotional stress and trauma. The evaluation at the Cz location recorded a value of 74, which is significantly above the normative range, indicating the absence of severe emotional stress.

At the O1 location, the assessment recorded a value of 12, which is indicative of the presence of trauma-related neural patterns.

Conversely, the values recorded at the F4 location suggest relatively stable brain activity at Alpha and Beta only. The Theta brainwave value was 26, indicative of emotional volatility, whereas Alpha at 13, and Beta at 12, all of which fall within a healthy range. With Theta at a higher value – at the remarkable ranges, it is an indication of emotional volatility as indicated by her neurological markers; when a trauma memory is activated or triggered, she will experience extreme emotionally dysregulation. The Clinical Q findings highlight a complex neurological profile, characterized by severe emotional stress alongside areas of emotional volatility without the ability to cognitively self-regulate.

Due to the demands of her professional responsibilities and being from a neighboring country, she is unable to attend regular daily or weekly therapy sessions. To accommodate the lack of time and distance, the intervention was adapted to fit her schedule, consisting of three

intensive sessions on the same day - held at 9 a.m., 1 p.m., and 5 p.m. This format allowed her to complete the intervention within a single day, due to her limited availability for multiple visits. The intensive nature of these sessions was intended to facilitate a concentrated and focused memory reconsolidation, designed to address her emotional dysregulation and trauma-related symptoms effectively within the constraints of her time.

Following the intervention, a post-assessment using the same assessment instruments and Clinical Q tool was conducted the subsequent month to evaluate changes in the participant's neurological state and emotional regulation. This follow-up measure allowed for a thorough analysis of the impact of the intervention on her emotional and cognitive functioning, providing critical insight into the effectiveness of the three-session intensive approach.

Comparisons of the pre- and post-intervention scores, as presented in Tables 27, 28, 29, 30, and 31, demonstrate notable changes in the participant's psychological, emotional and neurological state. These data offer a quantitative analysis of the participant's progress, illustrating improvements in emotional regulation, cognitive processing, and overall mental well-being.

Timing	PHQ-9 Desired>9	Anxiety (GAD-7) Desired>9	Stress (DASS-21) Desired>25
Before Brain-Switch 2.0™	11	15	40
One month after last session	2	5	5

TABLE 27: Assessment of PHQ-9, GAD-7 and DASS-21 before and after Brain-Switch 2.0™ therapeutic intervention

PHQ-9: Patient Health Questionnaire; GAD-7: General Anxiety Disorder-7; DASS-21: Depression and Anxiety Stress Scale

Timing	PTSD assessment	CPTSD assessment	PTSD Score	DSO Score
Before Brain-Switch 2.0™	Met	Met	15	18
One month after last session	Not Met	Not Met	3	4

TABLE 28: Trauma assessment before and after Brain-Switch 2.0™ therapeutic intervention

PTSD: post-traumatic stress disorder; CPTSD: complex PTSD; DSO: disturbance in self-organization; ITQ: International Trauma Questionnaire

PTSD/CPTSD/DSO were assessed using ITQ

The ITQ, PHQ-9, GAD-7 and DASS-21 stress saw a clinically positive significant change, from trauma to non-Trauma post-intervention, the disappearance of depression, anxiety and stress experiences and symptoms post-intervention. The Disturbance in self-organization decreased – indicating a more regulated self.

TABLE 29: PTSD Scores

Symptom cluster/Scale	Pre	Post
Re-experiencing in the here and now (Re)	3	1
Avoidance (Av)	6	1
Sense of current threat (Th)	6	1
PTSD score	15	3

TABLE 30: CPTSD Scores

Symptom cluster/Scale	Pre	Post
Affective dysregulation (AD)	6	1
Negative self-concept (NSC)	4	1
Disturbances in relationships (DR)	8	2
DSO score	18	4

Timing	Cz-Alpha Response Desired<30	O1-Alpha Response Desired<50	F4-Theta Desired>15	F4-Alpha Desired>15	F4-Beta Desired>15
Before Brain-Switch 2.0™	74	12	26	13	12
One month after last Brain-Switch 2.0™ session	85	45	17	12	12

TABLE 31: Clinical Q Brainwave assessment before and after Brain-Switch 2.0™ therapeutic intervention

Cz-Alpha Response: Severe Emotional Stress; O1-Alpha Response: Trauma Marker; F4 Theta: Emotional volatility; F4 Alpha: Emotional dysregulation; F4 Beta: Predisposition to depressed mood states

Cz/O1/F4 locations were assessed using the Clinical Q Protocol

The clinical results indicated a clinically significant change in her mental wellness. The Clinical Q Alpha Response at the Cz site significantly improved from the pre-Brain-Switch 2.0™ intervention with an increased from 74 to 85. This signifies that neurologically, she is better regulated emotionally. The O1 location recorded a significant improvement. The trauma marker of 12 increased to 45, an increase of 33 points. This is an indicator that from a neurological level, the trauma marker is moving towards more healing at the normal ranges.

At the F4 locations, values at Theta, Alpha and Beta decreased, with Theta from 26 decreasing to 17, Alpha from 13 decreasing to by 1 point to 12 and Beta remaining at 12.

The PHQ – 9 scores significantly decreased from 11 to two, indicating that the earlier complains of depression has been addressed and lowered. The GAD-7 scores for Anxiety from the initial value of 15 decreased to five, again indicating a significant positive change. The DASS-21 for stress score decreased from 40 to five. This significantly indicates positive progress of the intervention on her mental health wellness.

The PSTD active symptoms of re-experiencing in the here and now (Re) decreased from three to one, avoidance (Av) decreased from six to one and sense of current threat (DR) decreased from six to one. The active symptoms on the disturbance in self-organization (DSO) scores significantly decreased from 18 to four. Similarly, her internal experiences of affective dysregulation (AD) decreased from a six to one; negative self-concepts (NSC) decreased from a four to one and disturbances in relationships (DR) decreased from an eight to a two.

In summary, all six-case study recorded improvements after either three sessions or an intensive three Brain-Switch 2.0™ interventions within one session.

Chapter 5: Discussion

This research aims to explore the clinical efficacy of Brain-Switch 2.0™, with three primary objectives:

1. To assess how well Brain-Switch 2.0™ works in managing trauma, depression, anxiety, and emotion-related issues.
2. To examine the adaptive nature of human resilience underlying Brain-Switch 2.0™'s effects on trauma and memory reconsolidation.
3. To find important factors that affect how well Brain-Switch 2.0™ works in various individual cases.

From the data collected and comparisons between pre and post intervention tabulated, all six cases saw positive improvements, from dramatic changes to small incremental growth. To explore the three objectives, I would like to go deeper into each individual case to understand the impact on post intervention.

Table 32 Summarizes the presenting problem with its associated neurological marker

Person Specifics Gender/Age	Presenting Problem	Neurological Marker as indicted from the Clinical Q
Female, 46 years old	Anxiety, Depression, Self-doubt	**Cz** Alpha Response indicates severe emotional stress
Male, 60 years old	Loss sense of meaning and purpose and underlying depression	**Cz** Marker for severe emotional stress **O1** Marker for Trauma
Female, 26 years old	Emotional dysregulation, low sense of self worth	**Cz** Marker for severe emotional stress **O1** Marker for Trauma
Male, 26 years old	Poor self -esteem and in financial hardship	**Cz** Marker for severe emotional stress **O1** Marker for Trauma
Male, 50 years old	Severe emotional dysregulation with self-harm behaviours	**F4-Theta** Marker for emotional volatility **F4 Beta** Marker for predisposition to depression
Female, 55 years old	Severy emotional dysregulation and anger outburst	**O1** Marker for Trauma **F4-Theta** Marker for emotional volatility

Table 32 gives a summary of the six-case studies, the presenting issue/s and corresponding neurological markers (remarkable ranges) before intervention. The average age of the females is 42.3 and the average age of the males is 45.3. n=6, female = 3 and male = 3

5.1 Effectiveness of Brain-Switch 2.0™ in managing trauma, depression, anxiety and emotion-related issues.

According to the World Health Organization (WHO) report, around 70% of people globally will experience a potentially traumatic event during their lifetime and an estimated 3.9% of the world population has experienced PTSD at some point in their lives (Koenen, K.C. et.al, 2017). However, only one in four people with PTSD in low- and middle-income countries report seeking any form of treatment. Barriers to care include lack of awareness that PTSD can be treated, lack of availability of mental health services, social stigma and lack of trained mental health care providers. In 2019, the WHO 2019 reported that one in every eight people, or 970 million people around the world, were living with a mental disorder, with anxiety and depressive disorders the most common yet access to treatment is lacking.

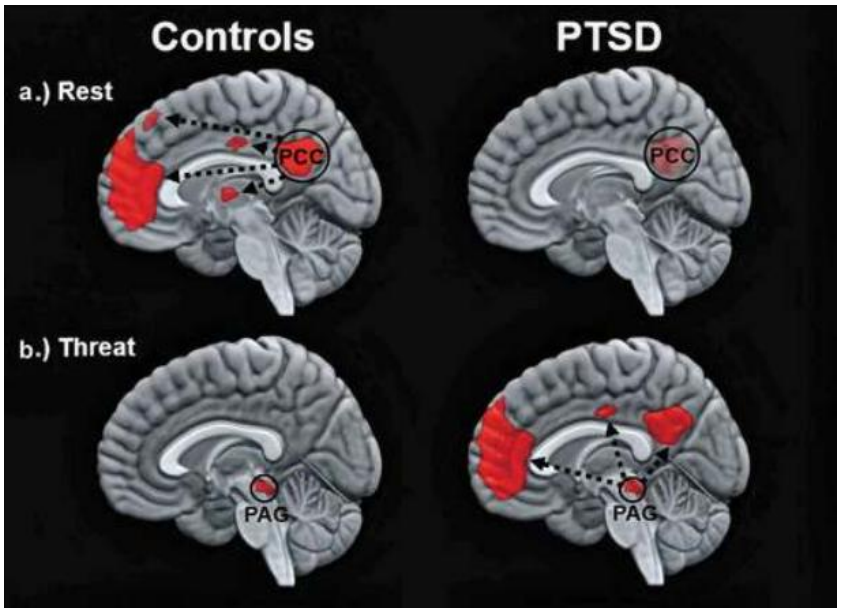
The original Neuro Linguistic Programming (NLP) model is supported by 30 years or more of anecdotal reports covering thousands of clients. Gray et al. (2019) focused on a meta-analytical assessment of various trauma therapies, including NLP's rewind technique (which is similar to Brain-Switch 2.0™ in the use of sub-modalities to reconsolidate memories). This study compared data from several investigations comparing NLP methods with conventional trauma therapies such as cognitive-behavioral therapy (CBT). The results indicated that participants undergoing sessions using the rewind technique had a faster symptom resolution rate compared to those of traditional CBT methodology. The strength of Brain-Switch 2.0™ lies in the fact that the intervention does not retraumatize, is content free and does not require the retelling of the traumatic event. The scholar-practitioner, like Muss and the Human Givens Group, have continued using the NLP rewind technique, and through Muss' efforts, the rewind technique is now a recognized treatment for PTSD in the United Kingdom (Carbonell & Figley, 1999; Dietrich, 2000; Muss, 1991, 2002). As alluded to earlier, Brain-Switch 2.0™ is a further development and enhancement of the NLP model, and the research data points to its effectiveness as reported under the rewind technique and/or the reconsolidation of traumatic memories protocol.

The results from the six case studies presented several similar patterns before intervention and positive outcomes at post intervention with Brain-Switch 2.0™. Each individual case presented initially with their own unique personal presentation of poor self-identity, doubting their worth even though they may be successful at work or in their personal lives. Under emotional stress, the ability to take reference on their positive personal history appears to be narrowed or non-existent. Responses were more reactive instead of reflective. The failure to take and make reference to their past history and make decisions is due to the default mode network (DMN), a term coined by Raichle, M. E. (2001). The DMN is a collection of active brain regions during introspective and self-referential tasks. Research indicates that positive changes in DMN connectivity can influence the reconstruction of identity and self - awareness in trauma victims. Lanius, R. et al. (2020) strongly argued on the critical connection between trauma and DMN functionality and as long as the trauma is unchanged / neurological having the active trauma markers as found in the O1 location (Alpha response value of 50 and bellow), the self-referential processing is interrupted, which can lead to difficulties in

reconstructing personal identity. (See figure 2 below) As seen in all the six case studies, all reported a sense of interrupted self, including feelings of detachment, fragmentation or confusion about their own identity. The integrating ability of DMN, influencing emotional and cognitive processing, positions it as a key factor in all self-experiences. The reconstruction of this network can contribute to the process of self-restraint, emphasizing the importance of neuroscience informed processes and the use of quantitative analysis like Clinical Q to track the progress. Frewen and Lanius (2015) suggests practices that encourage self-referential thinking can facilitate the restoration of a cohesive identity, promoting the adaptive activity of DMN. To understand how the case studies addressed this issue, we will deconstruct their individual restoration.

Figure 2. The two images show the functional connectivity of the DMN in healthy controls (left) and in participants with PTSD (right) under different conditions. Top and bottom images depict within-group patterns in functional connectivity during rest and during trauma-related stimulus processing, respectively. Whereas resting-state functional connectivity is depicted in relation to the time series of the posterior cingulate cortex (PCC), trauma-related functional connectivity is depicted in relation to the time series of the periaqueductal grey (PAG). Taken from Lanius et al. (2020)

This further illustrates that with Brain-Switch 2.0™ the connectivity between the frontal lobes and the posterior cingulate cortex (PCC) are fully connected and communicating at a level without the trauma. The PCC is viewed to support self-relevant evaluative processes related to cognition and emotion, including (a) maintaining a general representation of the environment, (b) appraising the emotional salience of environmental events, and (c) monitoring the environment for threats, Vogt et al. (2006). The PAG on the other hand is responsible for the development and maintenance of PTSD symptoms, including hyperarousal, avoidance, and intrusive/re-experiencing symptoms. Altered functional connectivity of the PAG is linked to the development of PTSD symptoms, Brandao et. al. (2019).



Case one was a 46-year-old married woman, who despite being professionally trained in her field of practice, presented herself with severe symptoms of depression, anxiety and self-doubt. Her neurological marker suggested that she was experiencing severe emotional stress. Unable to believe in her own self-worth, every episode of anxiety and depression made her further question her sense of worth and her sense of self as being of any value. With Brain-Switch 2.0™ she began to discard her 'triggering' memories with more speed and energy. She began to update her cognition with new beliefs - she began to own herself. She was able to deposit more personal beliefs of hopes for herself. She was able to create a visually compelling image of her preferred self. At the post assessment, she appeared confident, bubbly and reported the absence of depression and anxiety was under control.

Menon (2011) in his meta-research, explained that trauma can lead to changes in DMN functionality, typically presented by abnormal connectivity and activation standards. For case one, this was indicated by her Cz remarkable ranges value. These changes tend to manifest as difficulties to engage in one's identity, self-doubt and sense of imposter syndrome and may result in symptoms associated with posttraumatic stress disorder (PTSD) and other trauma-related disorders. Saarimäki et al.(2016) argues that survivors usually exhibit hyperactivity in certain regions of DMN when at rest, but display connectivity interrupted with other brain networks, which may impair their ability to process self-relevant. This research was also corroborated by Lanius (2015). The implications of these findings suggest that trauma not only affects cognitive and emotional regulation, but also fundamentally undermines self-referential processes.

After three sessions of Brain-Switch 2.0™, it was evident through the post assessment and self-reports that cognition was clearer. Issues that affected her was seen in a clear rational manner. Emotional stress and anxiety were within normal ranges and she was able to regulate herself. Her sense of self-worth emerged and she was able to take concrete steps in addressing herself without the negative self-beliefs.

Case two was a 60-year-old man, a member of a religious community. While on a social outward front/persona, he presents himself very well, pious, friendly and sociable. Yet his interior sense of self was under threat and unstable. He reported feeling having no meaning and purpose as a fully professed religious of 30 years as nothing he did appears to be of benefit to himself or to his religious congregation. He reported being reprimanded for being proactive and made to feel that he was not wanted as a member of the religious congregation. His outer friendly exterior masked his depression. Neurological markers for severe emotional stress and trauma was apparent. At the post assessment stage, he walked in smiling and looking confident. His sense of self and identity evolved and emerged after the three intensive Brain-Switch 2.0™ interventions. He reported appreciating his role in the religious community and found much joy in the things that he did. He reported that he did not need to compare himself with the other members. The depression and need to protect himself vanished.

Furthering on the disruptions and disturbances within the DMN, research has validated that not only does it affect the immediate recovery of autobiographical memories but can also hinder the capacity to envisage future scenarios. This inability to project yourself into future contexts is often called "thought-oriented thought", which is critical for a coherent feeling of self-continuity, Babo-Rebelo et al. (2016) and Bouulakis et al. (2023) . As seen in case two, even though he struggled to see any meaning pre-Brain-Switch 2.0™ intervention, the three

consecutive Brain-Switch 2.0™ interventions in the same one session gave him the internal resource, capacity and resilience to construct a significant future organically, because their self-referential index can stabilise the trauma as a past event and then file away the memory as a historical fact. The neurological marker at O1 of the Clinical Q assessment is evident of the change.

Case three was a 26-year-old woman, who experienced daily episodes of emotional dysregulation. She constantly compares herself with her peers and judges herself as being a poor performer, making a lot of mistakes – she concluded that she should quit her job as she was unable to meet the demands of her role in the legal system. When asked what she liked about herself, she could not find anything positive to say. Her years of exposure to domestic violence, attachment breaks, trauma and made to feel unwanted had created an identity perceived as fake, like the 'imposter syndrome' and barely functional. Kira (2019) emphasizes the importance of self-identity in understanding the dynamics of mental health, postulating that individuals who experience identity-like stressors or significant changes in life can fight their mental well-being. This struggle usually arises from a disconnection between personal beliefs and social expectations, leading to internal conflicts that affect emotional health. With her on-going struggles with herself, the neurological markers were positive for severe emotional stress and trauma.

With her history of attachment ruptures, interpersonal trauma can disrupt the functional integrity of the DMN which may lead to critical modifications of the way in which individuals perceive themselves and navigate social contexts. As mentioned earlier in the research of Lanius et. 1l. (2015), individuals with a history of trauma frequently have the alterations of DMN connectivity, which can manifest themselves as difficulties in self-referential thinking and a biased self-sense (Lanius et al., 2015). This disturbance will lead to a feeling of fragmented identity and challenges in emotional regulation, which are both essential for healthy interpersonal and intrapersonal relationships. Schilbach et al. (2008) further highlighted that DMN's commitment is crucial for social cognitive processes, including perspective and empathy and the disruption of this network after trauma can lead to challenges associated with understanding the emotions and intentions of others and self-reflection, further complicating interpersonal and intrapersonal dynamics. As seen in all six cases and in case three, the individuals who have experienced traumatic events tend to have a decrease in the ability to take perspective, which alters their ability to see a perspective that is more positive to self. This diminished empathetic capacity can mentally create feelings of isolation and alienation, exacerbating the psychological impact of the trauma and lead to the formation of mental health problems.

With three Brain-Switch 2.0™ facilitated within a single session, she began to experience herself distant from her past. When asked to think about her work stresses and home interpersonal dynamics, she commented that it is not important anymore. It was apparent she developed a sense of internal self-worth and was able to evaluate her situation rationally. The post assessment Clinical Q values indicated that the markers for severe emotional stress and trauma were rewired, and the brain-circuitries are at the normal ranges. It is interesting to discover and with the reconsolidation of memories with Brain-Switch 2.0™, her sense of positive self-worth is switched on, leading to a better quality of life.

Case four was a 26-year-old man, seeking help for his poor sense of self and constantly being used by friends. He constantly doubts himself and falls into an emotional downward spiral when he does not receive the level of connection for all that he does and invests in with the people around him. Though he is sociable and helpful, he tends to feel like a failure. Since his teenage years he had to step up and manage his schizophrenic mother who has suicidal behaviors to this very day. His Clinical Q results indicated markers for severe emotional stress and trauma. Research has shown that young adults who experienced trauma usually fight fragmented self-identities which is defined as a state where a person's sense of self is divided into separate, distinct parts, often due to severe trauma, leading to feelings of disconnection, confusion, and a lack of integration within their own identity. Kouvelis and Kangas (2021) conducted a systematic review that highlights the profound connection between interpersonal trauma and changes in self-identity. It is suggested that trauma not only distorts how individuals perceive themselves but also affect their ability to get involved in complying with relationships. Fragmentation of self-identity can lead to feelings of uselessness and inadequacy, thus aggravating the individual's mental health challenges.

Understanding this on-going struggle that he is experiencing daily, the Brain-Switch 2.0™ protocol focused on all his interpersonal struggles, all his different fragmented selves and beliefs about self to be switched and reconsolidated. Li et.al. (2014) suggested that the compromised and disrupted functioning of the DMN after a trauma has shown to affect social cognition by modifying the way in which individuals treat social clues and emotional information. Chronic activation of stress -related neuronal routes can still interfere with the DMN functioning. Individuals can misinterpret social signals or react inappropriately due to hypervigilance or emotional deregulation, which are often characteristic of a trauma response with the DMN functions by prioritizing the responses focused on survival to social engagement. In non-technical terminology, this is seen as fawning. Case four had all the signs of misreading social signals and had no ability to set personal boundaries. These struggles can have deep implications on how individuals relate to themselves and others. The self-referential and self-reflection are deeply hindered and an altered feeling of oneself can lead to an increase in social withdrawal and isolation (Immordino-Yang, 2016). When individuals fight against self -perception and emotional regulation, the effectiveness of their social interactions is decreased, which can lead to a cycle of disconnection and continuous distress.

Understanding these internal dynamics that was occurring in him, the Brain-Switch 2.0™ sessions was intentional in inviting him to switch away all the existing memories related to interpersonal relationships and his perception of self. At the post assessment stage, he was more relaxed and articulated that he was able to manage his personal boundaries and knew what he needed to do to grow in his job. It appears that he grew in his sense of self. Wang et al. (2019) proposed that navigating trauma can lead to post-traumatic growth. They emphasize the role of self in this transformation, suggesting that individuals can rebuild their identities and self -esteem through resilience. Post Clinical Q results indicated that the trauma marker is gone and severe emotional stress marker, though improved remains in the remarkable rages, but at be higher value, moving towards the normative range. As a postscript to this research, I was able to observe him by chance at a road show what he is leading. He was dynamic, able to engage strangers that were passing-by and he was also seen mentoring another peer on how to be confident in a roadshow.

Case five was a 50-year-old man seeking help as he is experiencing shame and guilt for a recent emotional meltdown. He expressed deep shame and self-blame regarding his recent meltdown as he consciously knew that it is not healthy, yet when he reaches his limits, he cannot contain the emotions. Though he loves his stepson, he is aware that his stepson's behaviors are the cause of the triggers. As he nicely articulated it "his stepson reminds him of himself when he was younger". His stepson is diagnosed with autism, and he tends to create the whole household unsafe with his violent and destructive behaviors. The man describe it as "he cannot be left alone and requires 24/7 monitoring."

Brain-Switch 2.0™ leverages on the memory reconsolidation process where a brief reactivation of the traumatic memory is followed by a stimulus interruption and cessation, rendering the original memory either inaccessible, innocuous, or is transformed into a similar but nonthreatening memory. A month's post intervention showed that the shame and guilt subsided. His Clinical Q - F4 values decreased but still at the remarkable ranges. His sense of self improved and was more positive, however what became apparent was his over identification with his depression. The positive outcome was for the first time, he was able to articulate his own needs and indicated that he would benefit from couples counselling as his meltdown was tied to his role as the primary caregiver.

Case six was a 55-year-old woman, married with two adult sons. She complained about being on edge, is hyper-vigilant and has uncontrollable emotional outburst whenever she is at home. Outwardly, she presents herself professionally, well regulated, proper and respectful. What was apparent in her narrative was an interruption of her childhood development towards being securely attached, having a healthy identity. When asked about a mildly distressing memory from the past, she chose to describe in a rather emotionally dysregulated manner about how she was sexually abused by her parents. According to Fraley et al. (2019), the first attachment experiences significantly form emotional regulation and interpersonal dynamics. Bodner et.at. (2014) further suggests that children who face inconsistent, abusive or detached care can develop anxious or avoidant attachment styles, preventing their ability to develop consistent and stable emotional regulations as adulthood. Instead, what was noticeable were the signs of a fragmented self. Research informs us that survivors of abuse frequently struggle with a negative self-image, contributing to a decreased or distorted self -concept. Melamed et al. (2024), conducted a meta-analysis that showed that negative self-concepts in children and adolescents are significantly correlated with trauma and abuse. This suggests that early trauma and abuse scars can be reinforced over time, solidifying the maladaptive views of the self that persist in adulthood.

In this research, three Brain-Switch 2.0™ interventions were conducted within a span of three-to-four-hour interval. At the end of the session, she was smiling, looking more at ease and 'happily' returned to her country saying she is neutral now. How did it shift so fast? The interaction between trauma, DMN and social cognition reveals a complex landscape in which the self is constructed and rebuilt by relational and intrapersonal dynamics. Brain-Switch 2.0™ appeared to have restored a coherent sense of oneself and improving interpersonal and intrapersonal capacities in the aftermath of the trauma. As discussed, the DMN which is associated with self -referential thinking, autobiographical memory and social cognition, often exhibits interrupted connectivity in individuals exposed to traumatic experiences. This dysregulation can manifest itself as a deteriorated sense of itself, resulting in difficulties with the formation and maintenance of identity, particularly those with chronic trauma stories,

leading to emotional volatility and meltdowns. The intensive Brain-Switch 2.0™ appeared to have restored the connectivity and functionality of the brain networks caused by the developmental history of trauma, thus promoting resilience, recovery and improvement to self-processing and integration.

At the one-month post intervention assessment, she reported to be functioning better, spoke with more confidence and was able to relate to her aging parents as a secure adult…it was as if she regained the core of herself and able to make sound informed decisions. Attachment theory is a framework to understand the impact of early relationships on the development of individual identity and emotional resilience. The safe attachment, characterized by a positive upbringing, vision of self and a confidence of trust towards others, tends to promote resilience against the challenges of life. Adverse childhood experiences creates insecure attachment and fragmented dysregulated sense of self. Arriaga et al. (2018) suggested that relationship experiences can modify relational attachment over time. They argue that positive relational experiences can improve attachment safety, which contributes to an evolutionary sense of self that is more robust and adaptable. This was seen in the way she began to relate to her family and her environment.

5.1.1Analysis of the ITQ data

Table 33 below shows the pre-and-post scores in the six individual's disturbances in self-organization (DSO). The International Trauma Questionnaire (ITQ) was specifically chosen for this research as the tool empirically evaluates emotional dysregulation, relationship difficulties and changes in self-concept. The conceptual framework of ITQ facilitates the identification of specific disturbances suffered by individuals, allowing a nuanced understanding of their traumatized responses.

Table 33 Pre and Post Data comparison on the Disturbances in self-organization (DSO)

Symptom cluster	Case 1		Case 2		Case 3		Case 4		Case 5		Case 6	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Affective dysregulation (AD)	5	2	5	0	7	1	2	1	5	3	6	1
Negative self-concept (NSC)	6	2	2	0	7	4	3	2	0	0	4	1
Disturbances in relationships (DR)	6	2	5	0	7	2	2	1	4	4	8	2

It was observed and discussed how everyone in the case study regained a sense of control of their lives and developed a positive sense of self identity. Table 33 empirically illustrates how the disturbances in self-organization decreased (DSO). The DSO sums up the disturbances that are manifested as a negative self-concept, the difficulties in regulating emotions and difficulties in social relationships after trauma. Disturbances in any of the three areas seen in each case study presented issues that significantly hampered their ability to navigate social interactions or relationships and manage emotional experiences, often leading to complications such as the development of comorbid mental health problems (Bachem et al., 2021) leading to a negative self-concept.

5.1.1.1 Disturbances in Self-Organization: Affective Dysregulation (AD)

The two statement area in the affective dysregulation (AD) dimension that are tracked in the pre-and -post analysis are "When I am upset, it takes me a long time to calm down" and "I feel numb or emotionally shut down". In the area of affective dysregulation (AD), research has systematically highlighted the prevalence of emotional regulation difficulties in individuals with trauma and mental health issues, which suggests that these challenges can complicate an integrated self-organization (Villalta et al. 2018). Affective dysregulation leads to an overactivation of the limbic system, which leads to either a hyper-arousal reaction or a hypo-arousal reaction (fight, flight or freeze) response. In typical mental health experiences, symptoms of anxiety, panic, depression, anger and emotional meltdowns are present and identified in all the six case studies. Research postulates that effective emotional regulation is closely associated with adaptive coping strategies, which contribute to better mental health results after trauma. Panlilio et.al. (2019) explained how self-regulation / affective-regulation acts as a shock absorber against the adverse effects of trauma, facilitating a deeper commitment in learning and development of new coping mechanisms.

In case one, the AD scores decreased from five to two. This is indicative of a significant improvement in her affect regulation. She experienced a better sense of emotional management and was able to inject fun and play in her professional and personal life. For the item "When I am upset, it takes me a long time to calm down", the score decreased from a three to a one and "I feel numb or emotionally shut down" score decreased from a two to a one. This clearly highlights the effect of the three sessions of Brain-Switch 2.0™ has on her affective regulation. Consistent with the theory of memory reconsolidation, once the memory is reconsolidated positively, the old neural patterns are disrupted.

Case two saw a clinically significant decrease in the scores AD from five to zero. The "When I am upset, it takes me a long time to calm down" item score decreased from a three to a zero and the "I feel numb or emotionally shut down" item decreased from a two to a zero. His improvements were evident at the post assessment phase when he kept articulating that he found renewed joy in doing the simple things as he is now able to see the bigger picture and his role in community living.

In case three, the AD scores decreased from seven to one, and she described that she is able to be better regulated and is now handling solo court cases as the lead counsel. For the item "When I am upset, it takes me a long time to calm down", the score decreased from a four to a one and "I feel numb or emotionally shut down" score decreased from a three to a zero. The AD score of seven decreasing to one represents a clinically significant change in the AD

Case four, the AD decreased from two to one, indicating the emotions are better regulated. For the item “When I am upset, it takes me a long time to calm down”, the score decreased from a two to a zero and “I feel numb or emotionally shut down” score remained at zero.

Case five AD scored decreased from five to three, reflecting a better management of his emotions instead of the immediate meltdown. For the item “When I am upset, it takes me a long time to calm down”, the score decreased from a four to a two and “I feel numb or emotionally shut down” score decreased from a one to zero.

Case six saw a clinically significant decrease in the AD scores of six to one. For the item “When I am upset, it takes me a long time to calm down”, the score decreased from a four to a one and “I feel numb or emotionally shut down” score decreased from a two to zero. No reports of emotional meltdowns were reported post intervention.

From the AD dimension, all reported improvement. Gross (2014) articulated that effective emotional regulation is a critical ability that significantly influences mental well-being, interpersonal relationships and personal growth. Houle et al. (2020) further argued that the integration of negative emotional experiences can promote overall well-being by integrating these experiences, thus promoting personal growth and resilience. From the area of AD, the Brain-Switch 2.0™ was shown to be effective. It can be deduced that without the need for the traditional processing of the individual self-perception and scenarios of what happens when they are upset and the time taken to calm down”, what typically requires three to five sessions in talk therapy like Cognitive Behavioral Therapy, this is achieved in just a single session with Brain-Switch 2.0™. Furthermore, the personal experiences of being numb or emotionally shut down improvements can be deduced to have occurred not in a cognitive way but from an internal reconsolidation of the memory and an updating of the connectivity in the DMN circuitries.

5.1.1.2 Disturbances in Self-Organization:Negative Self Concept (NSC)

The next dimension the research explored was the change and impact on the concept of self before and after intervention. The ITQ Negative Self Concept (NSC) is defined by the statement “I feel like a failure “and “I feel worthless”. The ITQ suggests that trauma not only interrupts the cognitive assessments of the self but also leads to maladaptive confrontation strategies that perpetuate a negative self-review. Engelbrecht et al. (2020) describes the negative self-concept as being manifested by being useless, shameful or inadequacy, which can significantly prevent psychological adjustment. Understanding the impact and improvements are essential because it influences the individual results of mental health and improves self-perception and general well-being. Beadle et al. (2016) found that individuals with a trauma history usually undergo substantial changes in their self-identity, leading to a decreased sense of self-esteem. Kouvelis et al. (2021) further highlighted that trauma can drastically alter someone's self-assessment mechanisms and integrate feelings of identity alienation or disconnection. This change from a positive to negative self-concept can aggravate the effects of trauma, resulting in greater vulnerability to depression, anxiety, posttraumatic stress disorder (PTSD) and complex PTSD.

Table 34 Pre and Post Data comparison on the Negative self-concept (NSC)

Symptom cluster	Case 1		Case 2		Case 3		Case 4		Case 5		Case 6	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Negative self-concept (NSC)	6	2	2	0	7	4	3	2	0	0	4	1

Table 34 above illustrates that there were changes and transitions from a negative to a positive self-concept with the introduction of the Brain-Switch 2.0™ protocol. Banz et al. (2022) in a systematic review highlighted the critical link between self-concept and PTSD, revealing an anecdotal knowledge that individuals with negative self-assessments are less likely to commit themselves effectively in therapeutic interventions, thus prolonging their symptoms and hindering general recovery. This finding further rationalizes the logic that therapeutic interventions has to be brief and effective with lasting progress. From the pre-Brain-Switch 2.0 ™ scores, five out of the six cases indicated a concern in relation to having a positive self-concept. Not feeling like a failure and worthlessness tends to influence the neural circuitry which then affects the emotional regulation. Thus, the negative concept of self not only affects an individual's psychological resilience but also interferes with their motivation to participate in treatments that could promote healing.

This research relied on the neural brain activity assessment collated via the Clinical Q method. In the field of neurofeedback, a neurofeedback training at the Occipital Lobe (O1 location) aims to improve self-awareness by teaching individuals to consciously modulate brain activity, potentially enhancing cognitive functions and emotional regulation. Neurofeedback is a type of biofeedback that uses real-time monitoring of brain activity (brainwaves) to provide feedback to the individual, allowing them to learn to self-regulate their brain functions. This can further be deduced that an improve connectivity and brainwaves activation at the O1 location will lead to better self-regulate, hence enhancing better self-reflection, self-worth and self-belief. In Lou's research (2023), the research underscores the behavioral and brain responses associated with reflected self-assessment and implicit self-esteem in individuals. The study indicates that individuals with negative concepts of self was connected to a reduced activation in the medial prefrontal cortex, which is crucial for self -referential processing. This neural activity can perpetuate negative self-references about oneself, creating a feedback circuit that is then reinforced as a negative memory reconsolidation. Individuals who then automatically internalize the negative self-concepts often face greater activation in the amygdala, which responds to the threats perceived. During the activation of the amygdala, there is a change in the neuronal circuits. The amygdala, responsible for processing emotions like fear, takes over the brain's response to a perceived threat, temporarily disabling the prefrontal cortex (responsible for rational thought and decision-making), leading to an immediate, emotional reaction. Goleman (1995) termed this phenomenon as an amygdala hijack.

Case one saw a shift, the initial NSC score of six decreased to two. Her self-perception of herself as a failure score from a three reduced to a one and the score for feeling worthless decreased from a three to a one. From the Clinical Q assessment, her O1 values increased from

81 to 102. With a stronger brain connectivity which automatically leads to an improved self-concept and deactivation of the fear circuits, she was able to take positive actions.

Case two saw a decrease from two to zero - a lower or zero score reflects an absence of any negative self-concept. The “I feel like a failure” and “I feel worthless” pre-Brain-Switch 2.0™ was at one. From the Clinical Q O1 location assessment of his brainwaves, the pre-Brain-Switch 2.0™ value was 13. This was indicative of not just trauma but an over-activation of the fear circuits, leading to a poor negative self-referential processing. The post O1 value increased to 52. This is quantitative neurological evidence that the three cycles of Brain-Switch 2.0™ within a single session not just rewired his neurology, it also repaired a negative self- concept to a positive self-concept.

Case three saw a significant decrease from a high NSC score of 7 out of a maximum 8 to a lower NSC score of four. While this indicates an improvement in self-concept, it also suggests more sessions may be needed to further address the NSC. For the item “I feel like a failure”, she scored it at a maximum four out of four and “I feel worthless” was at a three out of a four. Her personal presentation and meltdowns are reflective of her internal states and experiences. Even though she was able to perform her tasks at work, the negative self-concepts (failure and worthlessness) dominated her thoughts, leading to regular emotional dysregulation. The constant cognitive rumination was not positive – “I am a failure”, “I am worthless” and “I should quit”, reinforced the negative neural loop. These self -deprecating thoughts contribute to the chronic activation of these neural circuits, often leading to a reduced sense of resilience. Miranda (2024) in her research suggested that when individuals perceive themselves as incapable or weak, the emotional unease is further amplified. The Clinical Q O1 pre-Brain-Switch 2.0™ values stood at 48, still within the remarkable ranges. In the post-Brain-Switch 2.0™, her internal state of “I feel like a failure” decreased to a two and “I feel worthless” decreased to a two. The post NSC score of four is still in high. However, the Clinical Q O1 post score of 61 is indicative of a brain circuitry that is not in trauma nor experiencing an amygdala hijack. The improved value of 68 suggest that she is now able to review her self-referential processes from a emotionally stable vantage perspective, with lesser negative rumination and better decision-making processes.

Case four saw a small decrease in the NSC score from three to two. For the “I feel like a failure” pre-Brain-Switch 2.0™ was at a two and “I am worthless” was at a one. The pre-Clinical Q O1 value was at the remarkable ranges of 8. Though the self-scoring of the NSC was lower than expected, yet the neurological marker showed how entrenched the trauma and inability to self-regulate was operating. These lowered self scoring demonstrates an impaired-reduced risk assessment capacity, leading to non-optimal choices that can further exacerbate emotional discomfort and boundary setting. The decision-making process (setting clear personal boundary) can become a source of anxiety, reflecting the establishment of chronic negative thought and emotional discomfort. The promotion of resilience through targeted interventions becomes crucial, since the improvement of the cognitive flexibility of individuals and resilience can move their activation of the neural circuit to a more positive path. The post-Brain-Switch 2.0™ NSC score for ‘I feel like a failure’ decreased to one where as ‘I feel worthless’ remained unchanged. From the neurological level, the O1 value clinical increased from an eight to 52. This is an indication that from a neural circuitry perspective, he was not operating from a trauma and fear perspective. Free from the amygdala hijack or ‘trauma personality’, he will be able to self-appraise himself based on objective feedback and reflection.

Case five NSC scores were at zero and pre and post Brain-Switch 2.0™. His Clinical Q pre and post were at the higher positive normative ranges. The data suggests that he had a positive self-esteem and able to reflect on his feelings and thinking. However, as reported by him and verified by the Clinical Q F4 assessment, the emotional meltdowns were not caused by a negative sense of self nor activation of the negative emotions but due to an overactive Theta and Beta brainwaves at the F4 location.

Case six pre-Brain-Switch 2.0™ NSC score was four. For the 'I feel like a failure', she scored it at a two out of a four and 'I am worthless' was at a two out of a four. From the Clinical Q O1 Location assessment, the value was at 12, indicating that neurologically, it was running a trauma circuit, filled will fear, hyper-vigilance and hyper-arousal. It is interesting to note that while she might not have full understanding of herself and may not have evaluated herself accurately, the neurological markers showed otherwise. Due to her years of being sexually abused by her parents, the altered insecure and ambivalent attachment style and a deteriorated self -concept are even more prominent. Cohen et al. (2016), who identify the disturbed self -concept as a mediating factor between child abuse, including sexual abuse and the development of adult personality pathology stressed that the individual ability to assess the NSC is compromised. The results suggest that people who experienced such abuse are more likely to find difficulties in establishing healthy relationships, managing emotions and participating in constructive self-assessment. The Brain-Switch 2.0™ sessions focused on reconsolidating all the abuses represented in her memory through the sensory information system and the negative self-images and self-concepts that she had internalized. Her post NSC score for 'I feel like a failure' decreased to zero and 'I am worthless' decreased to one. The post Clinical Q O1 value was at 45. This is a clinically significant increase of 33 points. However, the value of 45 is indicative of the presence of trauma that with time and with the self-administered Brain-Switch 2.0™, it will further improve. A shift from a negative to a positive self-concept often catapults personal growth by instilling a sense of agency and motivation. When there is a positive perception of self, there is a likely tendency to establish and pursue personal goals, reinforcing the belief in their abilities and skills. This was seen in all cases as each took steps to extend not just their personal and relational domains but to include wider general satisfaction in life. Lodi-Smith at el. (2018) researched this issue further and confirmed the correlation between the clarity of self-concept and general well-being.

5.1.1.3 Disturbances in Self-Organization: Disturbances in relationships (DR)

Table 35 Pre and Post Data comparison on the Disturbances in relationships (DR)

Symptom cluster	Case 1		Case 2		Case 3		Case 4		Case 5		Case 6	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Disturbances in relationships (DR)	6	2	5	0	7	2	2	1	4	4	8	2

In the ITQ domain for Disturbances in relationships (DR), the focus is on the personal evaluation on the statements “I feel distant or cut off from people” and “I find it hard to stay emotionally close to people”. It is widely accepted that PTSD and complex PTSD tend to manifest behaviorally in ways that can interrupt interpersonal relationships. The ITQ was selected for this research because it classifies the disturbances in relationships (DR) as key contributors to distress linked to trauma, thus offering an overview of the underlying mechanisms that feed the trauma and complicates the post-traumatic growth aspects. As seen in the case studies and people who experience relational ruptures, they often report an exacerbation of the symptoms of PTSD, in particular, avoidance and negative alterations of mood and cognition. These disturbances can manifest themselves as conflicts with family members, friends or romantic partners, leading to persistent feelings of alienation, isolation and emotional instability. ITQ proposes that individuals who support these relational disturbances may have trouble accessing support networks, reducing their resilience and adaptation capacities to the day after the trauma. Consequently, the interaction between relational disturbances and the responses of trauma can contribute to a self-perpetuation cycle where the symptoms of the PTSD reinforce negative relational models, which, in turn, exacerbate the experiences of trauma. Neurologically, there will be indicators of the trauma markers – Clinical Q O1 location recording will indicate values at the remarkable ranges.

Symptoms usually include aggressive or removed/distant behaviors, self-destructive acts and unpredictable emotional responses and meltdowns. Kliethermes et.al (2014) further stressed how exposure to chronic trauma at a young age can lead to the development of attachment problems, leading to difficulties in the formation of stable relationships during adulthood. The inability to trust or to be involve in a relationship are often reflected in interpersonal conduct, where behaviors can oscillate between seeking proximity and withdrawal in isolation, creating an unstable relational landscape.

The tabulated data above, as seen in Table 35, illustrates significant improvements in the relational landscape for all the cases except case five. The individual narratives post intervention of the five cases suggests a positive psychological and relational change, which is part of the broader concept known as post-traumatic growth. An increasingly recognized factor in the facilitation of post-traumatic growth is the positive development of the role of relational styles and supportive relationships. These social connections are essential to promote resilience and allow personal transformation after trauma. Henson et al. (2021) meta-analysis suggests that various relational factors, including perceived social support and the quality of interpersonal relationships, are strongly correlated with the post-traumatic growth. They further highlighted that the positive relationships provide emotional support, improve adaptation strategies and facilitate cognitive restructuring, which are all integral to promote positive growth after trauma.

Case one pre-Brain-Switch 2.0™ DR score was six. The self-report score for ‘I feel distant or cut off from people’ was at a three and ‘I find it hard to stay emotionally close to people’ was also at a three. The maximum score for the DR item is eight. This is an indication that prior to Brain-Switch 2.0™, she was experiencing a disruption in relationships. The post-Brain-Switch 2.0™ interventions which consisted of three weekly sessions saw a significant change in her relationships. She reported better connections with peers and took the initiative to be engaged in peer gatherings. The post-DR score decreased from six to two. The self-report score for ‘I feel distant or cut off from people’ decreased from three to one and ‘I find it hard

to stay emotionally close to people' decreased from three to one. The results in the DR clearly reflected her narratives post treatment – engaged in social gatherings and feeling less isolated.

Case two pre-Brain-Switch 2.0™ DR score was five. The self-report score for 'I feel distant or cut off from people' was at a three and 'I find it hard to stay emotionally close to people' was at a two. The pre-intervention narrative revealed that he was experiencing isolation in his own religious community. He felt displaced and existence in the community was excruciatingly painful. Three Brain-Switch 2.0™ interventions was provided in a single session as his distress was affecting his mental wellbeing. At the post-intervention assessment, he reported finding his place in the community and in his own words, he did a "180 degree" change in the way he perceived and related to his superiors. Not only did he report being able to relate to his other religious members, but he was also able to recognize his role instead of comparing and feeling unfairly treated. In his own account, he developed a passion for cooking for the community. The post-DR score decreased from five to zero, with both items 'I feel distant or cut off from people' and "I find it hard to stay emotionally close to people" scoring zero. It appears that resilience miraculously appeared in him post-Brain-Switch 2.0™. However, this is not correct. The ITQ classification of DR reveals significant implications for understanding trauma experiences and the potential for post-traumatic growth via the relational aspects. Relational disruptions and disorders, such as interruptions of attachment and social support networks, have profound effects on the reactions of individuals to trauma, influencing both their immediate psychological responses and their longer -term recovery projections. By integrating the rational from the ITQ, it becomes clear that the relational context in which the trauma occurs cannot be overlooked. Relational disorders not only contribute to the intensity and nature of the experience of trauma but also seem to be fundamental in modeling the paths through which post-traumatic growth can emerge. As for case two, he already had a ready community and all he needed was to repair the break that mostly existed only in his mind. When the memory reconsolidation process happened, he saw and related to his community from a resilience growth perspective.

Case three pre-Brain-Switch 2.0™ DR score was seven out of a maximum eight. The self-report score for 'I feel distant or cut off from people' was at a four out of a maximum four and 'I find it hard to stay emotionally close to people' was also at a three out of a maximum score of four. Case three was an individual who had to develop adaptive resilience at a very young age in the face of domestic violence and being forced to live outside, moving from homes to homes – without having a permanent place until graduating with a Law degree. Research by Duan et al. (2015) illustrates that individuals who exhibit higher levels of resilience demonstrate a distinct ability to process trauma in ways that promote cognition and emotional healing. Resilience allows individuals to address their traumatic experiences and constructively deal with the trauma, reformulating these events as opportunities for personal development rather than debilitating setbacks. This is where Brain-Switch 2.0™ is an effective tool as the reconsolidation of the traumatic memories are processed content free, hence minimizing emotional dysregulation while benefiting from the outcomes in a briefer way. As she endeavored to repair her work stressors, her resilient traits can manifest in increased emotional regulation, enhanced communication skills and greater willingness to seek and take calculated risk, thus nourishing the growth process. As expected, at the post-Brain-Switch 2.0™ assessment, she reported better engagement with her bosses and found it less stressful to relate to the Court Judges and opposing lawyers. The post DR item "I feel distant or cut off from people" decreased from four to one and "I find it hard to stay emotionally close to people"

decreased from three to one. Hence the overall DR score of a seven decreased to a two, indicating better relationship connections and lesser isolations.

Case four pre-Brain-Switch 2.0™ DR score was two. The self-report score for 'I feel distant or cut off from people' was at a one and 'I find it hard to stay emotionally close to people' was at a one. It is interesting to highlight that even though he reported having interpersonal relationship problems, reported feeling isolated, being ostracized by his peers and feeling lonely at work, he did not score it high. This can be attributed to his personality that tends to suppressed it while looking externally together and integrated. It is worth noting that the Clinical Q readings at Cz and O1 locations was assessed to have markers for severe emotional stress and trauma. Pyszczynski and Taylor (2016) suggests that individuals suffering from trauma usually engage in a defensive avoidance of their experiences to protect themselves against overwhelming emotions. This appears to be what case four was doing. With a history drug abuse and being a drug pusher, to being the receiving end of his mother's psychotic episodes, one can just extrapolate how it would have impacted the development of positive relationships. The under reporting of the DR scores and the evidence of severe emotional stress and trauma at Cz and O1 indicated neurological circuits that were firing the signals for hyper-vigilance and fear. The post-Brain-Switch 2.0™ DR score decreased from two to one. The Clinical Q values at Cz increased from 11 to 23 and O1 values increased from eight to 52. At the post assessment, he reported feeling safer relating to his colleagues and learned to set some personal boundaries. Further chance meeting with him indicated a dynamic young man interacting well with his peers and customers at a recent road show.

Case five did not see any change in the pre-post score, remaining at four. He did not report any disturbances in relationships. His concern was centered on his emotional volatility and meltdowns. The Clinical Q values at Cz and O1 were at a high normative range – corroborating his self-reports. Nevertheless, at post-Brain-Switch 2.0™ saw a significant shift progress when he personally articulated the need to have a joint session with his spouse to discuss the management of their son (his stepson) which is the major trigger to his meltdowns. This on its own merits is positive progress towards improving and supporting relationships. Jayawickreme et al. (2014) proposed that the ability to negotiate support relationships and have open communication can also allow individuals the possibility of engaging in the discourse on their stressors, thus facilitating cognitive restructuring and emotional regulations.

Case six saw a clinically significant changes in the DR score. The pre-Brain-Switch 2.0™ score was at eight. The self-report score for 'I feel distant or cut off from people' was at four out of a maximum four and 'I find it hard to stay emotionally close to people' was at four out of a maximum four**.** With a personal history of sexual abuse by both parents, it is not surprising to observe extreme difficulties in relationships and trust. A maximum score in the DR category indicates significant difficulties in interpersonal connections. This interruption is manifested in a variety of experiences, including the decreased capacity of trust, the increase in conflicts within relationships and the greatest feelings of isolation (Hyland et al., 2019). Being in a relationship usually causes vulnerability and to self-regulate, relationships tend to become transactional and full of anxiety. In this case, she experienced bouts of emotional dysregulation and meltdowns. The post-Brain-Switch 2.0™ scores significantly decreased from eight to two. The self-report score for 'I feel distant or cut off from people' decreased from four to one and 'I find it hard to stay emotionally close to people' decreased from four to one. At the post assessment, she reported a positive shift in her relationship with her immediate family members

and her abusive parents in an age-appropriate manner, free from the emotional volatility. She was able to set boundaries and relate with them. The amygdala hijack that led to her emotional volatility where the brain automatically respond to perceived threats were down regulated as confirmed by Orji et al. (2024). It appears that she had developed self-resilience taking into account all her experiences while assessing it from a present, here-and -now perspective. She was able to not only relate to others but also with herself.

From the above analysis, the evidence indicates that the trauma symptoms as manifested in the active dynamics of affect dysregulation, negative self-concept and disturbances in relationships are reversed and self-organization emerges organically. Brain-Switch 2.0™ has shown to be effective in addressing the disturbances in self-organization, leading to the resolution of the trauma.

5.2 Effectiveness in managing depression, anxiety and emotion-based issues

Table 36 Depression, Anxiety and Stress Scores pre-post Brain-Switch 2.0™

Assessment Instrument	Case 1		Case 2		Case 3		Case 4		Case 5		Case 6	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
	Results		Results		Results		Results		Results		Results	
PHQ-9 >9 Depression	19	4	10	3	10	5	12	7	10	10	11	2
GAD-7 >9 Anxiety	8	0	11	3	18	7	11	8	8	5	15	5
DASS-21 >25 Stress	16	2	16	3	22	5	14	7	20	15	40	5

Table 36 highlights the initial scores before and one month post intervention. All six cases met the depression score, needing to score nine and above to be assessed with depression. According to the World Health Organization (WHO), depression involves having a depressed mood or loss of pleasure or interest in activities for long periods of time. An estimated 3.8% of the population experience depression, including 5% of adults (4% among men and 6% among

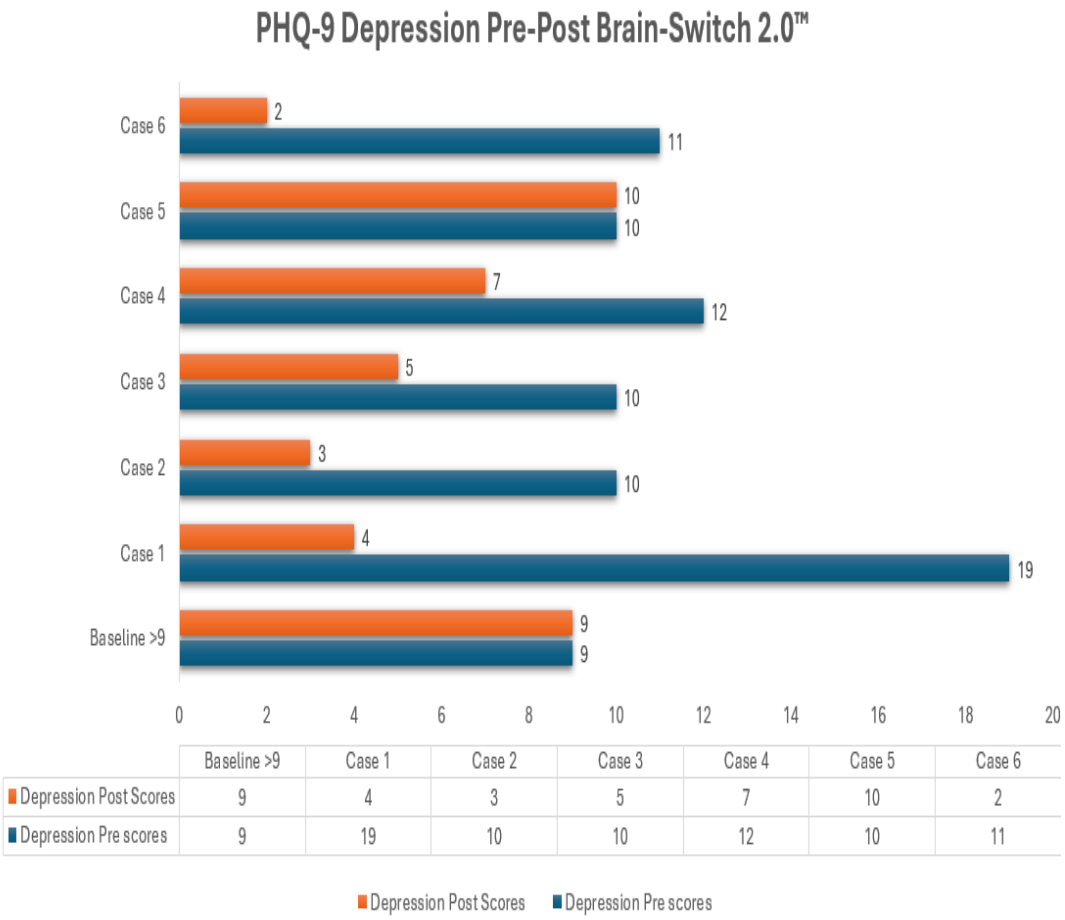
women), and 5.7% of adults older than 60 years. Approximately 280 million people in the world have depression.

Four out of the six cases indicated the score of nine and above to meet the anxiety assessment and only case six met the score for stress. According to WHO, anxiety is defined by having experiences of fear and worry that is both intense and excessive. These feelings are typically accompanied by physiological symptoms and other behavioral and cognitive symptoms. They are difficult to control, cause significant distress and can last a long time if untreated. Anxiety disorders interfere with daily activities and can impair a person's family, social and school or working life. An estimated 4% of the global population currently experience an anxiety disorder.

Trauma has been widely accepted for a long time as a critical factor that influences mental health, which often leads to conditions such as depression and anxiety. Hovens et al. (2015) explained that the experiences of traumatic events, particularly during childhood, deeply affect psychological wellbeing in adulthood. Huh et al. (2017), further emphasized that the severity of depression and anxiety symptoms in adulthood can be managed by cognitive and emotional regulation strategies that develop in response to child trauma. This is where Brain-Switch 2.0™ is designed to modify sub-modality perceptions to facilitate change, leading to new responses that are beneficial.

The six-case studies saw each individual struggling with their own mental health issues-depression and anxiety, and often exhibiting maladaptive self-regulation strategies, which then exacerbate their emotional agitation and worsen their general mental health. One of the research hypotheses of Brain-Switch 2.0™ is that individuals will be able to better regulate emotionally, thus decreasing the mental health symptoms related to the individual specific experiences-depression, anxiety and/or stress. Extremera et al. (2015) provided a greater perspective of the moderating role of emotional regulation capacity in the relationship between stress and well-being. Their findings suggest that those with effective emotion regulation strategies are better equipped to handle stressors, thus developing more resilient psychological health.

5.2.1 Analysis of the PHQ-9 Data



	Baseline >9	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Depression Post Scores	9	4	3	5	7	10	2
Depression Pre scores	9	19	10	10	12	10	11

Graph 1 PHQ-9 Pre-Post Brain-Switch 2.0™ scores

Graph 1 shows the PHQ-9 depression scores. Case one and case six saw a clinically significant decrease in their PHQ-9 scores. Case one PHQ-9 score decreased from 19 to 4. This is clinically significant as not only did her depressive symptoms become manageable, but she was also able to think of her future and proactively take concrete steps. Her work performance improved and relationship with money became more grounded in analysis and investment. She even articulated in a recent check in that "I am feeling good about myself", marking another milestone progress. Case six PHQ-9 score decreased from 11 to two. Without the need to withdraw, she reported going back to meeting her abusers without the past fears. From a clinical perspective, a decrease in the PHQ-9 score correlates to improved emotional regulation and an increase in the general satisfaction of life. The experience of emotional recovery can lead to a renewed sense of joy, motivation and stability (Hossain et al., 2020). With an improvement in mental health, individuals can develop a more positive self-image and greater self-acceptance, which contributes to improving emotional well-being.

From a cognitive perspective, a lower PHQ-9 scores typically lead to improved functioning in focus, enhanced decision-making skills, and increased problem-solving skills. According to the Diagnostic and Statistical Manual 5 (DSM-5), depression is associated with cognitive deficiencies, such as difficulties with concentration and memory. Therefore, as individuals experience a decrease in the severity of depression, they may be better able to get

involved in daily tasks and challenges. Furthermore, in systemic thinking, there will be an impact on the social dimension. Systemic thinking in mental health recovery is a framework that emphasizes the interconnection of individual experiences, social influences which leads to a holistic understanding of mental health. Systemic thinking acknowledges that mental health problems are not only the result of individual factors but are significantly formed by broader social contexts. According to Peters (2014), the use of systems thinking helps to elucidate the multiple factors that affect health results. For example, systemic thinking recognizes that individual experiences of mental illnesses are influenced by social determinants such as socio -economic state, education and community support.

Hence, it will also be seen in all the case studies that there is an improvement to the social component upon recovery . Socially, the recovery of depression can initiate significant changes in interpersonal relationships and social life. Individuals usually report a greater willingness to engage socially as their depression scores decrease, from withdrawal to restore connections with friends and family. This social reintegration can lead to an enriched support network and develop stronger relationships, which in turn provide enhanced emotional support and contribute to sustained recovery.

Case two PHQ-9 score decreased from 10 to three. This again shows the simplicity yet effectiveness of a memory reconsolidation process via the Brain-Switch 2.0™ process. Not only did he take proactive actions in being part of a community, but his negative self-schema also automatically became positive. Taylor et al. (2017) highlighted the need to focus in changing the negative schema as the main treatment against these cognitive distortions. Their systematic review in various mental health disorders has suggested that interventions aimed at modifying unsuitable patterns can cause significant reductions in depressive symptoms. Case two showed tremendous improvement in the decision making and problem solving. Instead of being the victim, he took charge of his thinking and instead of making decisions based on emotions, he was able to think and connect on the social level.

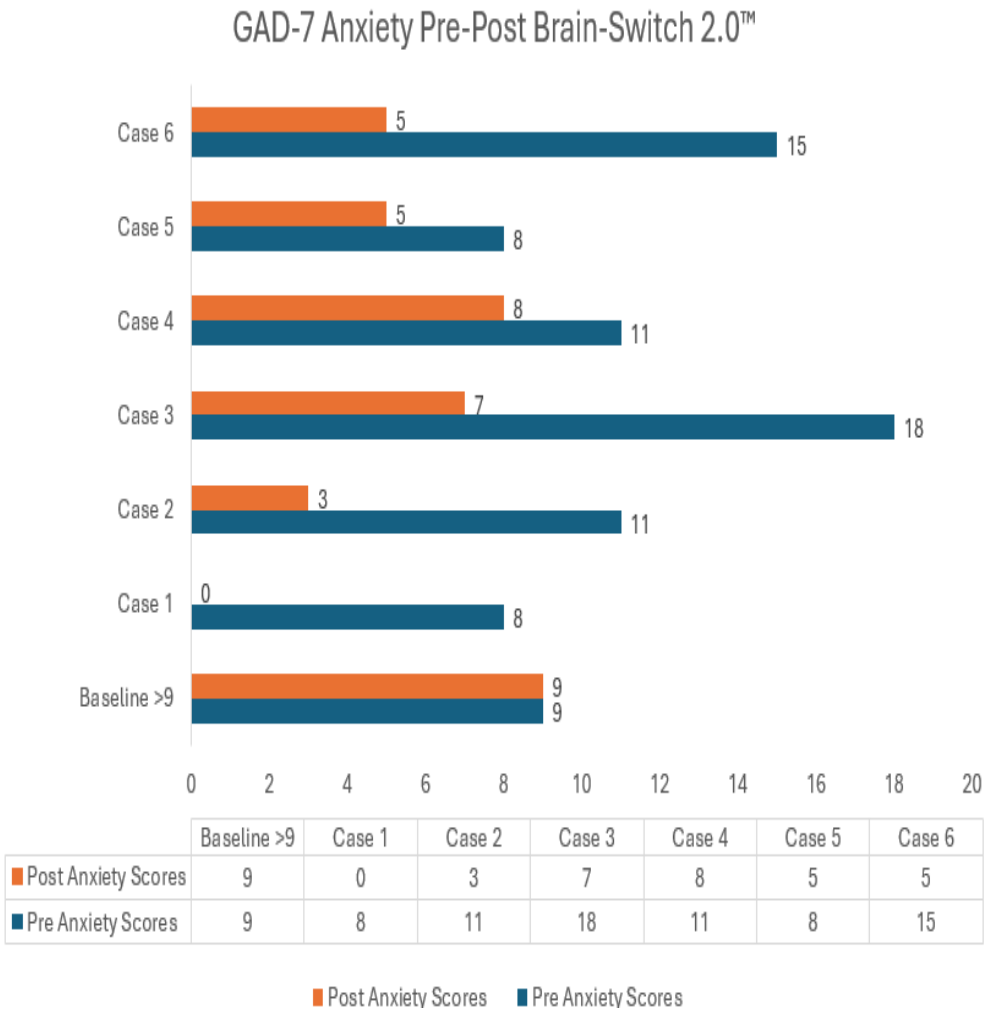
Case three PHQ-9 score decreased from ten to five. Without skipping a heartbeat, she easily integrated back to her job demands and crying spells ceased. She had confidently taken over the role of solo lead counsel in all court cases. As mentioned earlier, emotional regulation plays a fundamental role in mental health, acting as a fundamental ability that positively enhances the coping strategies, relationships and general well -being of an individual. Emotional regulation is also an integral part of the development and strengthening of interpersonal relationships. The effective regulation of emotions promotes the healthiest interactions by promoting empathy, understanding and conflict resolution. It has been suggested that individuals who present higher levels of emotional intelligence tend to navigate their relationships more successfully, indicating that emotional regulation can improve social well -being and relational harmony (Cherdondsky & Hunt, 2019). For this case, the Brain-Switch 2.0™ not just improved her mental health, it gave her the capacity to develop emotional resilience and intelligence.

Case four PHQ-9 score decreased from 12 to seven. Even though the decreased was not as dramatic as the previous four case studies mentioned above, the result does indicate a decrease. This is an indication that for some cases, more sessions beyond just a single Brain-Switch 2.0™ will be necessary.

Case five PHQ-9score remained unchanged at 10. This is the only case that did not see any decrease. One major reason was the ecological environment that he was in – taking on the main responsibility to care for his stepson who is diagnosed with attention deficit hyperactive disorder (ADHD) and autism with destructive behaviors while still trying to manage his own mental health recovery. Coyle et al. (2015) suggested that emotional resilience, which is characterized by its ability to adapt to stressors and maintain emotional balance, serves as a crucial measure for recovery. Just like case four, this is an indication that more sessions may be necessary to facilitate the development of emotional resilience and intelligence.

5.2.2 Analysis of the GAD-7 data

Graph 2 below show the changes in the GAD-7 scores for anxiety. All six cases saw a significant decrease in the GAD-7 scores, which is indicative that the individual experience of anxiety has lessened. With a decrease in anxiety symptoms, clear thinking and decision making are possible. Anxiety is characterized by excessive concern and fear, which significantly affects cognitive processes. Anxiety can influence critical cognitive domains, including attention, memory and decision making. The implications of such cognitive disturbances can be deep, permeating several contexts of life and manifesting in the short- and long-term effects as seen in the six case studies.



	Baseline >9	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Post Anxiety Scores	9	0	3	7	8	5	5
Pre Anxiety Scores	9	8	11	18	11	8	15

Graph 2 GAD-7 Pre-Post Brain-Switch 2.0™ scores

The Brain-Switch 2.0™ appears to have decrease the GAD-7 score by an average of 7.2, with case one, three and six showing the most substantial decrease. Hise et al. (2018) reiterated the understanding that attention and focus are the cognitive processes more easily affected by anxiety. People who experience anxiety often exhibit attentional biases, where they focus on stimuli related to threats, leading to difficulties to disconnect from such stimuli, hence amplifying the problem. The focus on the threat activates the amygdala and from a neuro-biological level, the brain and body are hardwired to be hypervigilant, constantly scanning the environment for potential threats. Since Brain-Switch 2.0™ leverages on the way memory can be reconsolidated, the intervention encourages the memory to be reconsolidated in a positive way, free from the threat. It is so easy to logically see how the excessive negative fear circuits tend to reinforced the problem in a non-productive manner. Vahia et al. (2020) research suggested that chronic anxiety can lead to altered memory reconsolidation processes, where experiences are not stored or recovered properly. With the decrease in all the scores, it is apparent that distorted and traumatized memories are reconsolidated in a productive organic manner. From the case studies, everyone before Brain-Switch 2.0 ™ was adopting their own risk aversion strategy, which often led to indecision, overly cautious behavior or reckless behaviors. Van Weert et al., (2016) suggested that this sensitivity to negative results compromises its ability to make effective decisions in personal and professional contexts. This is apparent in all cases. At post assessment, everyone was making better effective decisive decisions and were taking proactive actions and behaviors to be better integrated with themselves. From a neurological level, there appear to be better executive functioning of the cortex. The Ventromedial Prefrontal Cortex (VFC) is identified as a crucial region for understanding the relationship between emotion and decision making. Hyser et al. (2018) elucidate the role of the VFC and amygdala towards value-based decisions and regulating emotional responses. The connectivity of this region with amygdala, which is fundamental in processing of fear and anxiety, indicates that reducing anxiety can increase brain's ability to integrate emotional and cognitive information. The dynamics where the reverse occurs, where the amygdala reactivity is increased and over-riding the VFC functioning is termed as a "amygdala hijack." By overcoming anxiety, individuals can experience a more coherent decision-making process, supporting the notion that the amygdala is regulated, and emotions are not dysregulated leads to effective choices.

Case one GAD-7 score reduced from eight to zero. A reduced GAD-7 score often lead to substantial improvements in an individual's mental well-being. Shah et al. (2021) explored the relationship between GAD-7 scores and mental well-being, using the Warwick-Edinburgh's mental well-being scale for evaluation. They discovered that when GAD-7 score decrease, there is an accompanying improvement in general mental well-being. This relationship underlines the importance of minimizing anxiety symptoms; As anxiety decreases, individuals often experience a corresponding increase in the satisfaction of life, resilience and emotional regulation.

Case two GAD-7 score decreased from 11 to three. Though the score did not decrease to zero, the result did show a significant decrease after a single session of Brain-Switch 2.0™. This is an indication that the emotion regulation is returned to the individual post Brain-Switch 2.0™.

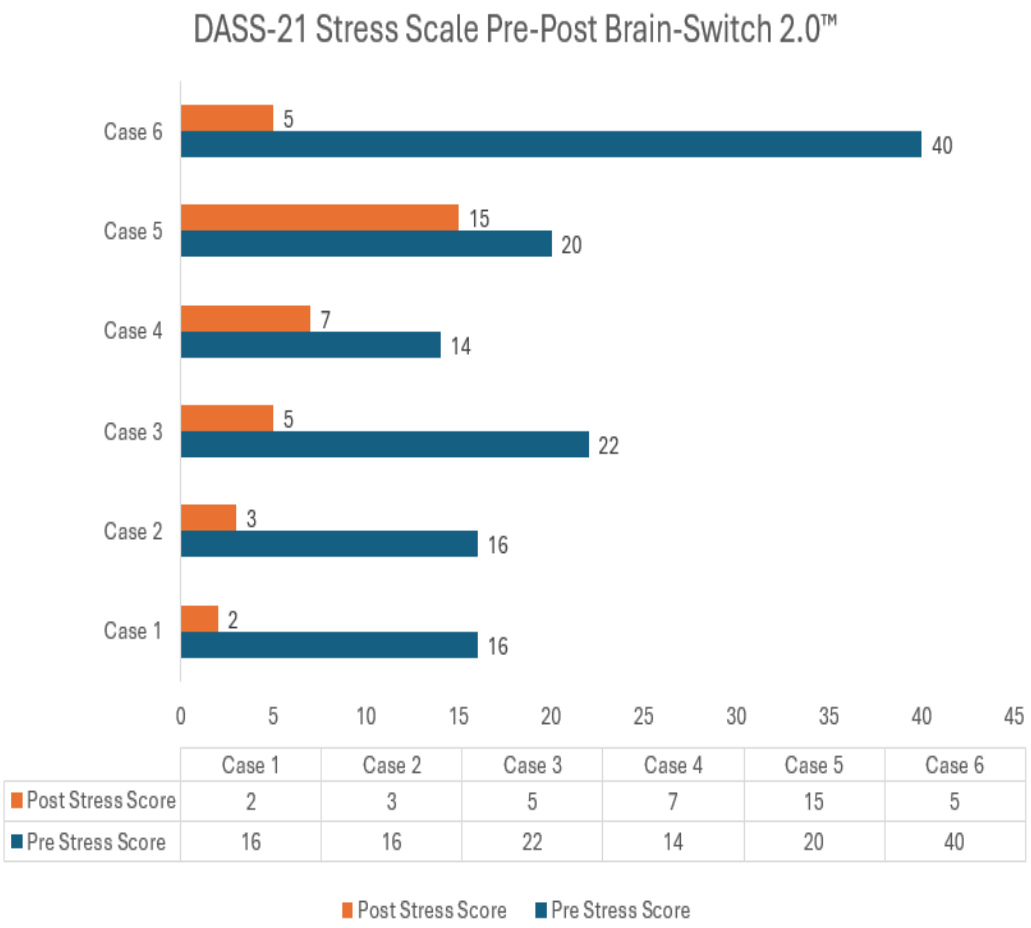
Case three GAD-7 score reduced from 18 to seven. The reduction was a significant seven points lesser. She experienced more regulation and able to function at work, without crying or feeling inadequate. Rumination decreased and was better manageable.

Case four GAD-7 score decreased from11 to eight and case five GAD-7 score reduced from eight to five. Though the decreased values were small for both cases, the self-reported social and intrapersonal self-regulation were positive.

Case six GAD-7 score decreased from15 to five. This is a 10-point decreased after three sessions of Brain-Switch 2.0™ within the same day. This significant decrease shows the versatility of the protocol and the empirical positive reduction in the mental health arena of anxiety. All six cases documented a quantitative deduction in the score, indicating a reduction of the anxiety reactivation leading to better regulation and the activation of VFC at optimal states, leading to better synergy between emotions and decision making.

Graph 3 below highlights the DASS-21 Stress scale scores. DASS-21 serves as a robust tool to monitor stress and its dynamic integration into clinical practices also highlights the importance of individual interpretation. The DASS-21 Stress scale allows clinicians to compare basic measures with follow-up scores to determine progress or identify potential setbacks. It should be noted that at post assessment, all six cases reported a reduction in the stress scores. Fink (2016) defines stress as an individual's perception of the environmental demands that exceed their personal resources and abilities, which usually leads to a series of adverse results. Chronic stress can lead to persistent dysregulation of body functions and mental health results.

5.2.3 Analysis of the DASS-21 Stress scale data



Graph 3 DASS-21 Stress Scale Pre-Post Brain-Switch 2.0™ scores

Case one DASS-21 Stress score decreased from 16 to two and case two DASS-21 Stress score reduced from 16 to three. This represents a significant improvement in mental well-being. A decrease in the scores of the DASS-21 stress scale indicates a reduction in the levels of stress experienced by not just case one and two, but to all six cases, with case six seeing the most dramatic decrease. This reduction can lead to a significant improvement in general mental health. According to Ali et al. (2021), individuals who experience lower stress levels are often better positioned to engage in activities of everyday life without the paralyzing effects of high stress such as irritability, fatigue and anxiety. Therefore, it is logical to deduce that when DASS-21 stress scores decrease, individuals can experience greater emotional stability and resilience, promoting a more positive vision of life.

Case three DASS-21 Stress score decreased from 22 to five. This shift was pivotal as she was able to achieve emotional stability, allowing her to stay focused on her task at work and when home. From a neuro-biological level, there was homeostasis where the limbic system was calm and physiologically in a relax state. Case four DASS-21 Stress score decreased from 14 to seven, though not too dramatic a decrease as in case three, yet the self-reports post Brain-Switch 2.0™ indicated the ability to engage socially instead of withdrawing. It appears to be apparent that lowered stress enhances mental wellness and sociability.

Case five DASS-21 Stress score reduced from 20 to 15. Throughout the research, case five showed the least decrease in all the instruments used to assess for change. One rational could be that the single session with three Brain-Switch 2.0™ may not had been suitable or perhaps a more regular three weekly sessions like case one may have yielded better outcomes.

Case six DASS-21 Stress score decreased from 40 to 5. The decrease was a clinically significant reduction of 35 points. The high pre-score indicated the she had high feelings of anxiety and depression which will lead to a reduction in well-being. The high decrease in the score is a positive reflection that new coping strategies were developed and a positive sense of well-being are hardwired into both the neurology and physiology. All six cases reported an average DASS-21 score decreased of 15.2. This is a clinically significant improvement in recovery and stress management post intervention. While the reduction in the stress scores appears natural and organic, what is happening is that the stress that negatively affects the function of the hippocampus, went through not only structural alterations, the hippocampus through the memory reconsolidation process, organically reconsolidated in a positive way that deactivated the stress response.

The analysis of the data in the area of mental health conclusively points to the fact that the depression, anxiety and stress symptoms became less prominent and better functioning was observed and reported. The decreased of the DASS-21 stress scale is indicative of good mental health, including an improvement in well-being, the development of effective coping strategies and greater general satisfaction of life. The interaction between reduced stress levels, improvement of mental health and adaptive coping mechanisms validates the effectiveness of Brain-Switch 2.0™ in enhancing mental wellness.

5.3 Tracking changes via the Clinical Q assessment

The research methodology included empirical quantitative data to evaluate neurologically the self-reported complains data that were collected via the self-assessment questionnaires of ITQ, PHQ-9, GAD-7 and DASS-21. Clinical Q facilitates the understanding and application of the analysis of specific brainwave patterns pertaining to clinical issues. For the purpose of this research, Clinical Q was used to identify severe emotional stress markers, trauma and emotional dysregulation markers, emotional volatility and depression markers. Clinical Q is a quantitative tool to identify the neurological markers for mental health. Table 37 shows the pre-post scores from the Clinical Q neurological markers of the identified mental for the research as follows:

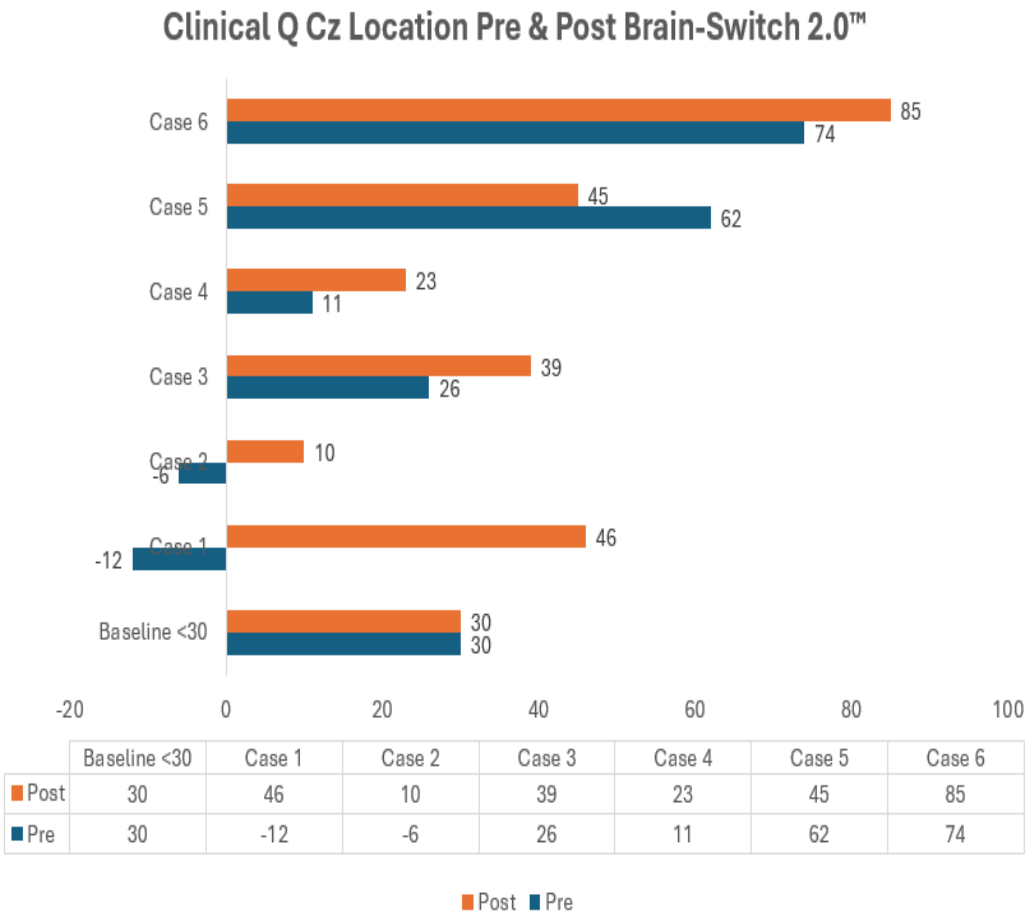
Table 37 Clinical Q Pre and Post Brain-Switch 2.0™

Assessment Instrument	Case 1		Case 2		Case 3		Case 4		Case 5		Case 6	
	Pre Results	Post Results	Pre Results	Post Results	Pre Results	Post Results	Pre Results	Post Results	Pre Results	Post Results	Pre Results	Post Results
Cz -Alpha Response Remarkable value <30	-12	46	-6	10	26	39	11	23	62	45	74	85
O1-Alpha Response Remarkable value <50	81	102	13	52	48	61	8	52	209	192	12	45
F4-Theta Remarkable value >15	12.5	14	-1	6	-17	5	3	-4	43	25	26	17
F4-Alpha Remarkable value >15	-4	11	-5	9	-10	5	-3	10	9	9	13	12
F4-Beta Remarkable value >15	4	14	10	11	-0.2	5	3	20	26	20	12	12

The data clearly highlighted the following: Case one was experiencing severe emotional stress as the main concern; case two, three and four were assessed to be experiencing severe emotional stress and trauma; case five was assessed to indicate flooding of emotions in the F4 location, indicating presence of active neurological circuits for emotional volatility and predisposition to depression and case six had markers for trauma and emotional volatility.

In the Clinical Q assessment, the Cz value below 30 is an indication of the presence of severe emotional stress; the O1 value below 50 is an indication of the presence of trauma; F4 Theta more than 15 indicates experiences of emotional volatility, F4 Alpha more than 15 indicates experiences of emotional dysregulation and F4 Beta more than 15 indicates predisposition to depressive moods.

5.3.1 Analysis of the Clinical Q – Cz location Data



	Baseline <30	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Post	30	46	10	39	23	45	85
Pre	30	-12	-6	26	11	62	74

Graph 4 Clinical Q Cz Values - Severe Emotional Stress Marker

Graph 4 shows the pre and post values at the Cz location. With the pre intervention scores assessed and analyzed, the clinical Q results were consistent with the assessment questionnaires. Severe emotional stress is characterized by overwhelming psychological pressure that can negatively affect the mental health of an individual, interpersonal relationships and general well -being. The effects of severe emotional stress has a neurological marker, suggesting that intervention should be targeting the neurological markers besides the psychological aspects. The impact of the severe emotional stress impacts both the mental health and also relationships and communication patterns. In their research, Houben, Van Den Nonortgate and Kuppens (2015) highlighted the observation that severe emotional stress will lead to experiences of anxiety, depression, irritability and emotional exhaustion. This will further lead to the withdrawal of social interactions and affect communication within personal and professional relationships. In addition, severe emotional stress can affect the cognitive functions of an individual, affect decision -making capabilities and reduce the ability to participate in the effective resolution of problems.

Case one pre intervention value was -12. A negative value indicates the severity from a neurological perspective. Just from this marker, the struggles that she was experiencing became apparent. Though nothing externally was triggering the severe stress responses, it was a different narrative from the neurological level. Anxiety, depression, emotional exhaustion and

withdrawal from social interactions were apparent. Obsession with risky investment dominate her thoughts and actions. At the post intervention assessment, the Clinical Q value at Cz increased to 46. The self-reported narratives were dominated with social interactions and absence of anxiety and depression.

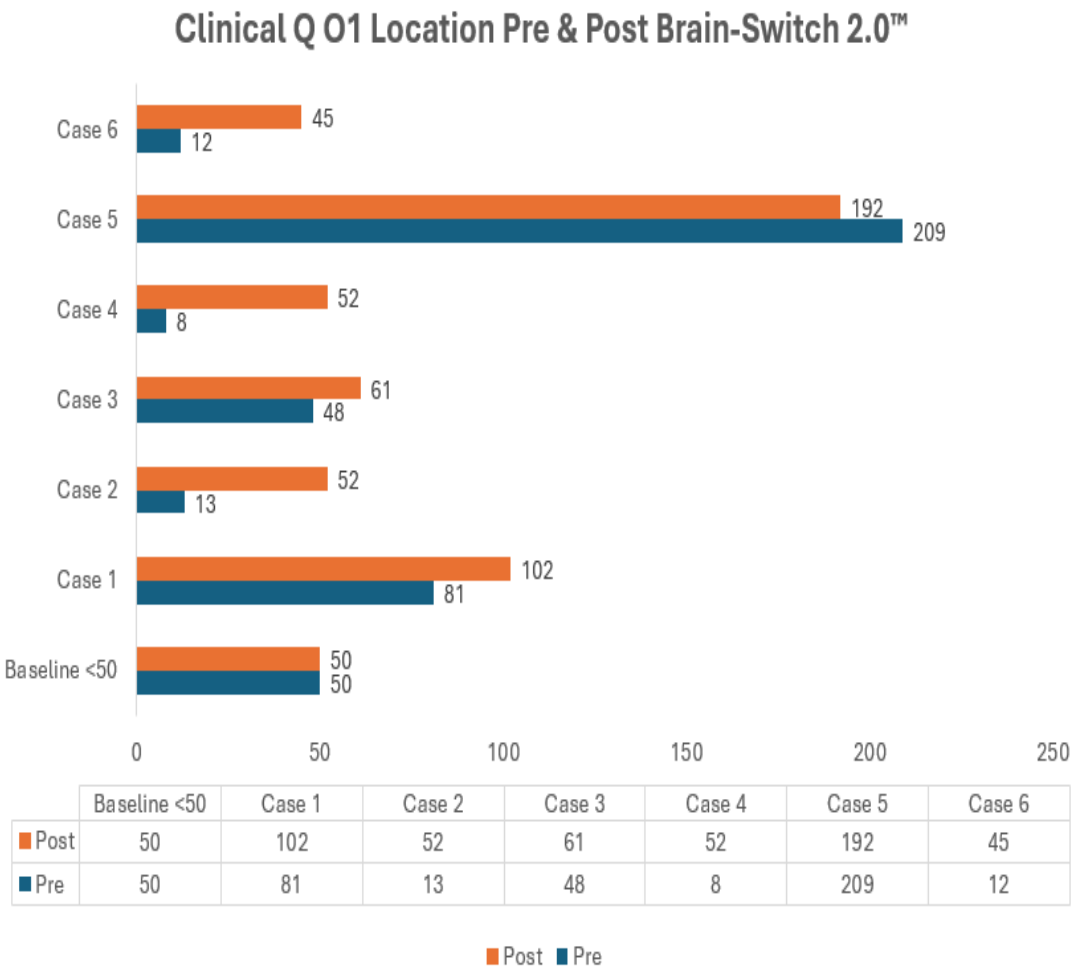
Case two pre intervention Clinical Q Cz value was -6. Just like case one, this is an indication of the neurological neural circuits was running a severe emotional stress state. The sense of isolation and lack of social interactions and acceptance impacted on his mental health. At the post intervention assessment, his Clinical Q Cz reading was at 10. Though this was still at the remarkable ranges, he took charge of his neurology and took action. He began integrating with his peers. According to Dodgen et al. (2016), creating supportive environments is essential to improve mental health results. Strong interpersonal relationships can act as shock absorbers against stressful factors, providing people with emotional validation and assistance in problem solving. In this case, he not only reconnected with his community, but his ability to solve problems also shifted positively and was able to communicate clearly.

Case three pre-Clinical Q intervention Cz value was 26. 26 is still within the remarkable ranges. At post-intervention, the Cz value increased to 39. This highlights the efficacy of Brain-Switch 2.0™ that in with a single session, there were neurological improvements, from the remarkable to the normative ranges.

Case four pre-Clinical Q Cz value was 11. 11 is in the remarkable ranges and marker for severe emotional stress. Outwardly, he did not show any external signs of being in an emotionally stressful state. His actions appeared generous and hardworking. Yet, the neurological markers gave a more accurate description of what was happening internally. The post Brain-Switch 2.0™ assessment Cz value increased from 11 to 23. This is still within the remarkable ranges yet he reported being in a better state and able to take positive actions.

Case five and six had no markers for severe emotional stress and remained at a higher normative range post Brain-Switch 2.0™. The data empirically validates the effectiveness in regulating severe emotional stress markers. The results for case two and four, though still showing the presence of severe emotional stress markers suggest that with one or two further Brain-Switch 2.0™ follow-up sessions will increase the Cz values to 30 and above.

5.3.2 Analysis of the Clinical Q-O1 location data



	Baseline <50	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Post	50	102	52	61	52	192	45
Pre	50	81	13	48	8	209	12

Graph 5 Clinical Q -O1 Location – Trauma Marker

Graph 5 shows the neurological marker for trauma. The implications of trauma extend beyond psychological pain to include significant physiological responses, which are increasingly understood through the neuroscience lens. Stein and Kendall (2014) in their research found that early traumatic experiences can alter the normative development of the brain, influencing emotional and cognitive functioning throughout a person's life. Prolonged exposure to stressful factors can activate the hypothalamic-pituitary-adrenal (HPA) axis. The HPA axis is a crucial neuroendocrine system that regulates the body's stress response, involving the hypothalamus, pituitary gland, and adrenal. Teicher et al. (2006) research the impact on the neurology by using neuroimaging techniques and shown that trauma can lead to structural changes in critical brain regions, including the prefrontal cortex, which play fundamental roles in the processing of fear and emotional regulation. These alterations in the structure and function of the brain can affect the ability of an individual to respond to stressors and manage emotions effectively, leading to maladaptive coping strategies and altered social functioning. Furthering this idea, the Clinical Q aims at tracking the changes in the trauma marker at the O1 location.

Case one and case five pre-Brain-Switch 2.0 ™ Clinical Q O1 value was at the normative ranges, at 81 and 209 respectively. This is an indication that there is no neurological marker for trauma. At post assessment, the Clinical Q O1 values increased for case one to 102 whereas case five decreased to 192.

Case two pre-Brain-Switch 2.0™ Clinical Q O1 value registered a value of 13. This is an indication of trauma. When trauma marker is present, the research suggest that the neurology is wired to be hypervigilant – it as if it is scanning the environment for the next danger. The post-Brain-Switch 2.0™ Clinical Q O1 value indicated a value of 52. 52 is within the normative ranges, meaning he does not have the trauma marker.

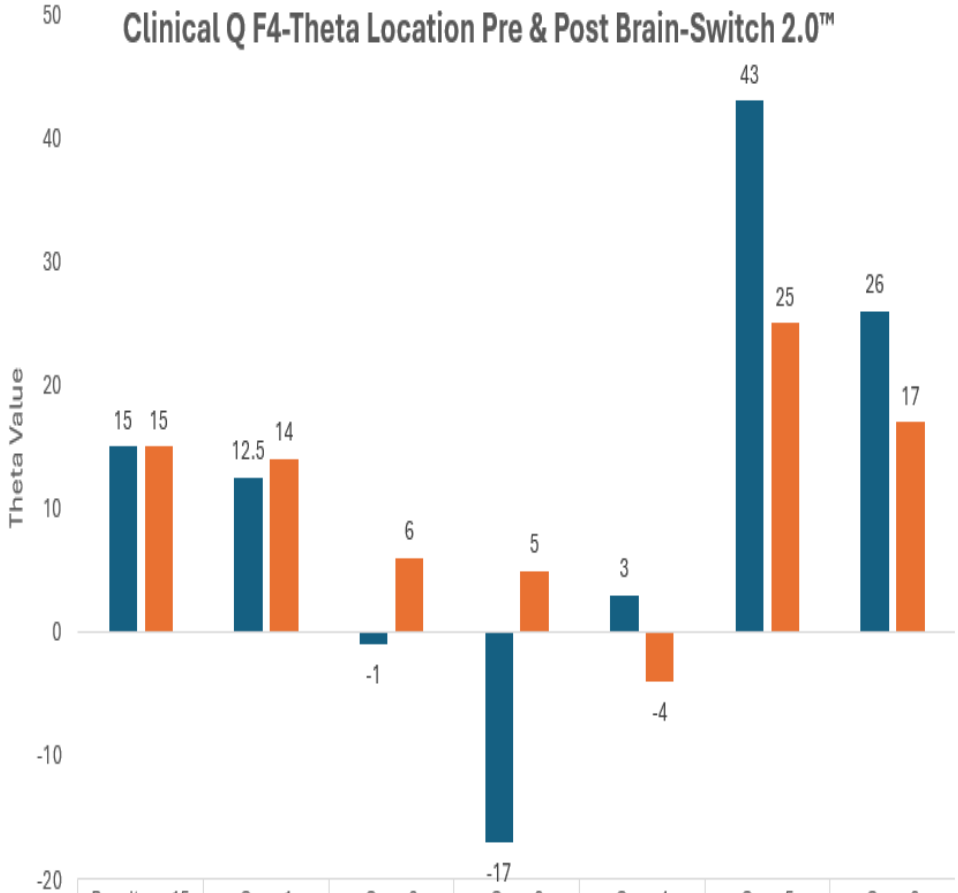
Case three pre-Brain-Switch 2.0™ Clinical Q O1 value registered a value of 48. The threshold of 50 and above is required to be in the normative ranges. This suggests the presence of trauma. At the post-Brain-Switch 2.0™ Clinical Q O1 assessment, the value increased to 61, indicative of a trauma free neurology.

Case four pre-Brain-Switch 2.0™ Clinical Q O1 value registered a value of eight. This low value is in the remarkable ranges, suggesting the presence of trauma. At the post-Brain-Switch 2.0™ Clinical Q O1 assessment, the value increased to 52. This suggest a clinically significant increase of 44 points and the marker of trauma is not present.

Case six pre-Brain-Switch 2.0™ Clinical Q O1 value registered a value of 12, indicating the presence of trauma. This trauma marker can be deduced to have been present at a very young age due to her history of sexual abuse from childhood until 18 years of age. At the post-Brain-Switch 2.0™ Clinical Q O1 assessment, the value increased to 45. While this represents a significant increase of 33 points, the post-Clinical results suggest that she is still in the remarkable range. This is indicative that three intensive sessions may not be sufficient to resolve childhood trauma.

Case two, three and four saw the values shift from the remarkable ranges to the normative ranges, case six value increased from 12 to 45 suggesting one or two more Brain-Switch 2.0™ sessions to increase the values and rewire the neurology to be free from the trauma marker. With the positive increases in the values, this is empirical evidence that the neurological brainwaves are now able to facilitate an accurate reflection of their past without triggering a trauma respond. Trauma influences the formation of storage and perception of personal history, causing deep implications for the identity and reconstruction of memory. Crespo et al. (2016) reviewed the literature on memory and narrative of traumatic events and highlighted how trauma interrupts the coherence of autobiographical memory, resulting in memories that are not only incomplete, but can also be revived as intrusive memories. Intrusive memories in return activates the trauma response. Iyadurai et al. (2019), reiterated that these intrusive memories take over the cognitive narrative of an individual, perpetuating a cycle of trauma, preventing the restoration of the narrative necessary for the reconsolidation of memory and identity. With the Brain-Switch 2.0™, the memories are reconsolidated as shown in the increase in the O1 values. This is evidence that Brain-Switch 2.0™ has a positive effect on the recovery and resolition of trauma in just one to three sessions.

5.3.3 Analysis of the Clinical Q-F4 location: Theta Data



	Baseline <15	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Pre	15	12.5	-1	-17	3	43	26
Post	15	14	6	5	-4	25	17

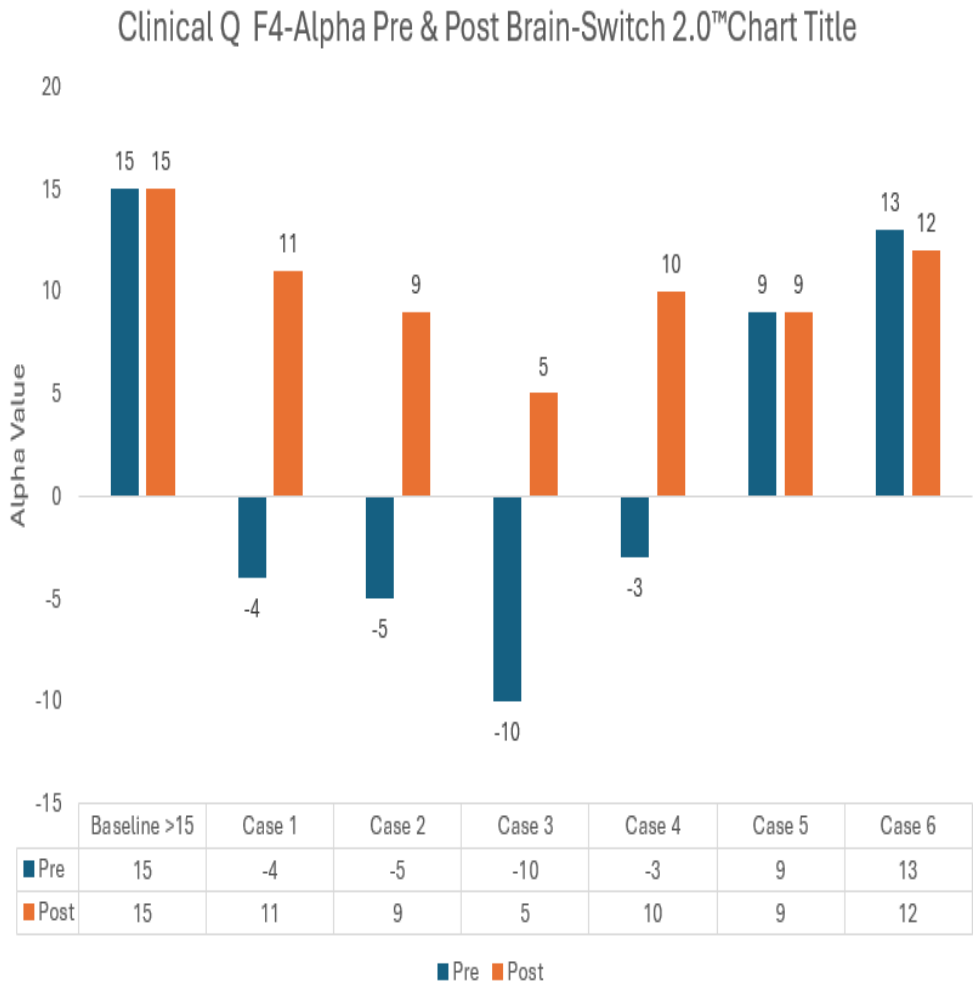
Graph 6 Clinical Q F4-Theta -assessing for emotional volatility

Graph 6 is the clinical Q F4 Theta assessment for emotional volatility. Emotional volatility refers to the rapid and extreme fluctuations in the emotional state of an individual, influencing how one experiences and expresses emotions, usually within familiar contexts. This phenomenon can significantly affect both individual mental health and interpersonal relationships. Houben et al. (2015) meta-analysis revealed that extreme fluctuations in emotions are positively correlated with less psychological well-being. People who experience emotional dysregulation are more susceptible to mental health disorders, including anxiety and depression. From the Clinical Q F4 assessment, this emotional volatility is due to the higher Theta brainwaves (>15).

Case one, two, three and four pre and post Clinical Q F4 Theta values remained at the normative ranges. This is consistent with their self-report of not having any concerns with emotional volatility. Consistent with the case study self-reports, only case five and six reported emotional meltdowns and uncontrollable emotional outburst. Case five pre-Brain-Switch 2.0™ assessment value registered 43. This is indicative of a higher amplitude on the right brain when

comparison to the left brain. At 43, this is 28 points above the normative ranges. The 43 value is consistent with his reports of self-harm and episodes of meltdowns. Three Brain-Switch 2.0™ interventions were given at the same session to focus on addressing the emotional volatility. The post intervention values indicated a neurologically improved marker. The value decreased from 43 to 25. While this is still in the remarkable ranges, the evidence suggests that with more Brain-Switch 2.0™ sessions, it will decrease further and be at the normative ranges. Case six pre-Brain-Switch 2.0™ assessment value registered 26. This is indicative of the presence of emotional volatility and consistent with what she described her issues were. At the post-Clinical Q F4 Theta assessment, the value decreased from 26 to 17. While still within the remarkable ranges, it does indicate that Brain-Switch 2.0™ did bring it down and based on the progress, one to two more sessions would have brought it down to the normative range and emotional volatility would have been managed better.

5.3.4 Analysis of the Clinical Q F4 location: Alpha Data



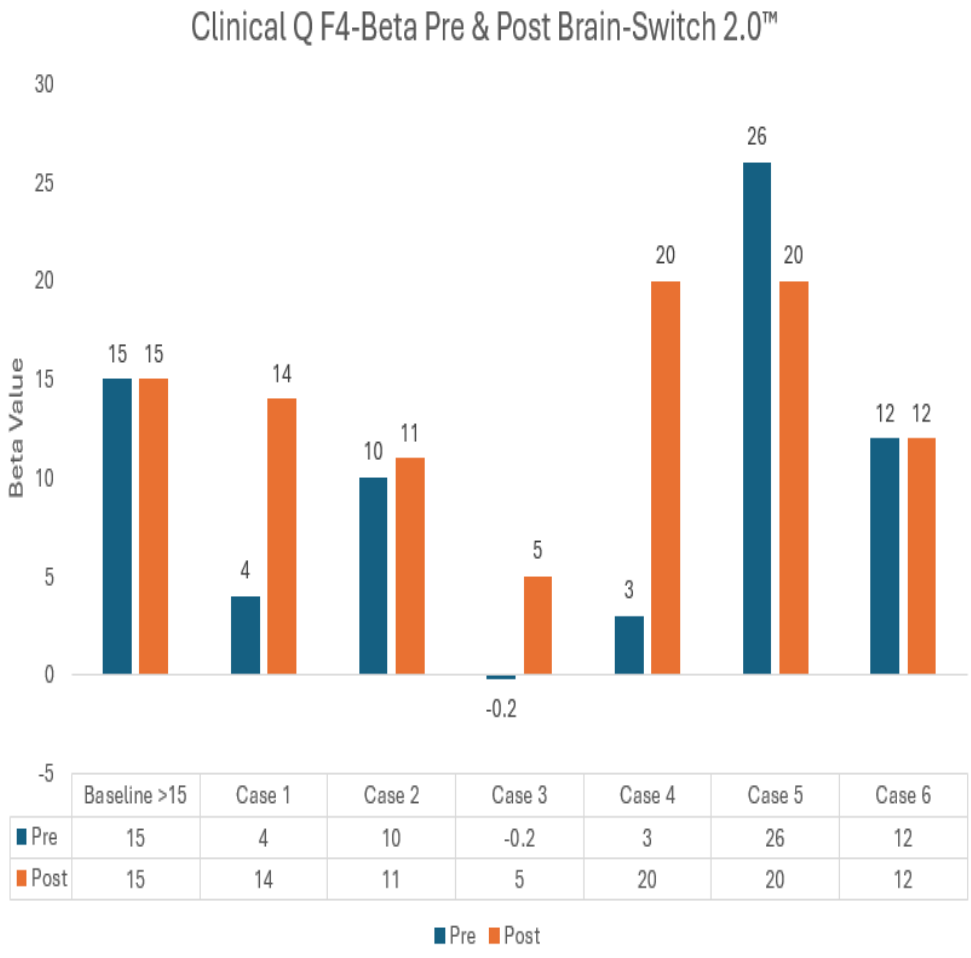
Graph 7 Clinical Q F4- Alpha – assessing for emotional dysregulation

Graph 7 shows the results of the Clinical Q F4 Alpha values pre and post rain-Switch 2.0™. Emotional dysregulation is a phenomenon that covers difficulties in handling emotional responses, which often results in disruptive behaviors and broad emotional experiences. Kopańska et al. (2022) has identified several signs and symptoms of emotional deregulation, including emotional numbness, the difficulty in identifying and describing emotions, and

greater reactivity to emotional stimuli. Clinical Q is a non -invasive technique that measures electrical activity in the brain and by quantifying variations in brain wave patterns, brain wave patterns that correlate with emotional dysregulation can be detected. Fusina et al. (2022) researched the brain wave patterns and suggests that alterations in the Ventral Attention Network (VAN), which is responsible for the allocation of cognitive resources in response to outstanding stimuli, are linked to greater emotional dysregulation. The Ventral Attention Network (VAN), also known as the ventral frontoparietal network, is a right-hemisphere-dominant brain network that responds to unexpected, salient stimuli, reorienting attention to them. For the purpose of this research, the location that measures this brain wave activity is at the F4 location. Consistent with the six case studies, none of the studies showed activity for emotional dysregulation. To make the distinction, case five and six neurological markers showed brain wave activities related to emotional volatility instead of emotional dysregulation.

5.3.5 Analysis of the Clinical Q F4 location: Beta Data

Graph 8 below illustrates the pre and post readings at the F4 location, Beta brain waves. This brain wave activity assesses for the neurological marker for depression. According to the World Health Organization (2021), depression is a mental health disorder that affects millions and characterized by persistent feelings of sadness, despair and lack of interest or pleasure in daily activities. Graph 8 data reflects consistently and accurately how depression affected the mental health of case four and five with the correlated elevated F4-Beta brain waves amplitude.



	Baseline >15	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Pre	15	4	10	-0.2	3	26	12
Post	15	14	11	5	20	20	12

Graph 8 Clinical Q F4-Beta – assessing for predisposition to depression

The values of case one, two, three and six remained at the healthy –at the normative ranges at pre and post Brain-Switch 2.0™. It is interesting to acknowledge that depression was not part of their concern nor symptoms that were raised as an issue to work on. Case four and five however presented with the typical depression symptoms – lack of direction, meaning, sadness and despair. Even though case four was not diagnosed with depression, he had a prior diagnosis a decade ago. Case four complained about difficulties in setting boundaries struggling to be part of a team at work. The pre intervention value was three and the post value increased to 20, indicating symptoms of depression and neurologically affecting his functioning. This may suggest that once the survival brain circuits and nervous system could dissolve the trauma and improved in the emotional stress signals (the Cz markers increased from 11 to 23 and the O1 marker increased from eight to 52), the depressive symptoms could be addressed next.

Case five had a diagnosis for depression and was on medication. The pre intervention value was also at 26, indicating the possible ineffectiveness of the medication. The post intervention value for case five decreased to 20, indicating that though there was improvements, the progress was not as fast as desired. This highlights the role of Clinical Q as a complementary assessment of mental disorders cannot be overlooked. Kopanska et al. (2024) suggested that the integration of qEEG/ Clinical Q within the diagnostic protocols significantly improves the understanding of complex mental health problems. The data reflects the positive outcomes when addressing the depression marker and perhaps a more robust Brain-Switch 2.0™ intervention, for example conducting three intensive sessions for three consecutive days to lower the values may be the way to further test the outcomes.

From the analysis of the Clinical Q data at the Cz, O1 and F4 locations, the evidence indicates that Brain-Switch 2.0™ is effective in managing trauma, depression, anxiety, and emotion-related issues.

5.4 Examining the adaptive nature of human resilience underlying Brain-Switch 2.0™ effects on trauma and memory reconsolidation.

In this research, all six cases in the study demonstrated the ability to recover very quickly from what looked like deep-seated entrenched issues, which traditionally requires medium to long term therapy. No one would imagine that only one to three sessions was all that is needed to facilitate meaningful change. This is the power of human resilience. Human resilience is generally understood as the ability to adapt, recover and resume psychological well-being from adversity, trauma and stress. According to Masten et al. (2016), resilience is not just a personal attribute, but a dynamic process influenced by several factors, including environmental conditions and social support systems. Resilience includes a series of innate traits and neurological plasticity, including emotional regulation, social support and cognitive flexibility, which collectively contribute to the abilities of individuals to recover following the trauma and emotion-based issues. Neuroplasticity is the capacity of the brain to reorganize by forming new neural connections throughout life. The ability to cultivate neuroplasticity has positive implications for mental health, allowing individuals to deal effectively with stress. The interaction between brain waves and neuroplasticity further explains the mechanisms underlying resilience. Brain waves are classified into different frequencies which reflect different states of consciousness and cognitive treatment. As we have discussed, the activating

of certain specific brain wave locations (Theta, Alpha and Beta) can influence emotional regulation and stress response. Understanding how brain waves are linked to neurological resilience can promote and enhance therapeutic strategies that integrates the memory reconsolidation process. Patron (2024) in her research shows that individuals characterized by greater resilience show distinct brain wave patterns, particularly in frequency bands associated with emotional regulation and cognitive processing (found in the F4 location). Increased connectivity in alpha and beta bands have been associated with effective emotional regulation and cognitive flexibility, both vital for resilience. As we have seen in the discussion of the Clinical Q assessment, the ability to enhance brain wave connectivity through Brain-Switch 2.0™ has shown the potential for improving resilience by promoting a more adaptable neuronal connectivity.

What is trauma? Trauma can be characterized by overwhelming experiences that arouse feelings of helplessness and despair and can have profound effects on psychological health. An active trauma experience can lead to various mental health problems, including post-traumatic stress disorder (PTSD), complex PTSD, anxiety and depression. Trauma tends to over-activate the nervous system, causing the nervous system to be hyper-vigilant – always on high alert for real or any imagined danger. Trauma considerably modifies perception, which means that the brain blurs the lines between real and imagined threats. Slade (2014) highlighted the role of imagination in the treatment of fear, suggesting that trauma can reclaim the models of thought to increase and amplify the negative possibilities, promoting an environment where imagined threats become indistinguishable from real threats. Garrett et al. (2018) reiterated this notion by stating that under the perceived threat, individuals update their beliefs and expectations in a way that may not reflect objective reality, potentially leading to unsuitable behaviors and anxiety. Trauma can then be defined as the lasting imprint of a threatening event on the mind, body, and brain. Trauma is more than just the memory of a past event. It's an ongoing state of high alert that can be re-experienced in the present. Key characteristics of trauma are:

- It overwhelms the central nervous system
- It alters how people process and recall memories
- It distorts the memory consolidation and reorganization of how the brain and mind manage perceptions
- It can cause people to feel helpless, terrified, or rageful (emotional volatility)

In terms of memory, the traditional understanding of memory as a stable and unchangeable construct has been challenged. Memory is now understood as a dynamic process, in which previously stored information can be updated and changed at the time of recall. This fundamental new understanding of memory is the cornerstone of what reconsolidation of memory is. Nader et al. (2000) had indicated that the reactivation of traumatic memories is not simply a passive recovery but an active process that can lead to updates in the content of memory. This process allows people to integrate new information and experiences, allowing the modification of the emotional responses associated with these memories.

When seen within a broader perspective of human resilience and recovery, the process of reconsolidation of memory is particularly relevant to the way individuals adapt positively in the face of adversity. Studies have shown that resilience is linked to the ability to reconcile and adapt the memories of stressful or traumatic events (Bonanno et al., 2007).

Looking at all six cases, the Brain-Switch 2.0™ process was able to achieve the following within three sessions or lesser:

1. Organically nurtured resilience
2. Trauma symptoms dissolved or decreased in intensity
3. New perspectives towards memory formed

Case one was able to turn around negative self-thoughts and limitation and now engaged in her life with positivity.

Case two recovered from his trauma and fully engaged in community living. He was able to see the perspective of his superiors and able to respond in a healthy way.

Case three regained her ability to function in a highly stressful job and dissolved her traumatic memories.

Case four was not only able to set healthier boundaries, but he was also able to refocus on what is important to him. He was able to deal with the backlash of his colleagues without sinking into self-blame and depression.

Case five was able to come to more awareness and articulate the need to have marital therapy and communicate more instead of assuming the worst and then feel overburdened.

Case six completely updated her memory – she saw her parents from the present lens and as a result, her trauma lessened, and emotional volatility was under control.

Brain-Switch 2.0™ is a process where memories that are traumatic (represented by the visual, auditory and kinesthetic forms / modality), depressive or anxiety provoking are reactivated and by throwing all the memories (visual, auditory and kinesthetic representations) into a bin and switching it to the left side, the current memories are destabilized, creating a neurological shift. When the bin and the contents are destroyed, the memory goes through a process of reconsolidation. When new perspectives and beliefs are updated organically and switched back to the right side, the memory incorporates the new information. This allows for the deactivation of the trauma and the mental health concerns and as seen in all cases, resilience occurs and organically emerges and grows naturally.

5.5 Factors that affect how well Brain-Switch 2.0™ works in various individual cases.

The analysis of the six case studies highlighted a few key factors that improves and/or affects the outcomes. The factors are:

- Agreement to change
- Openness to destabilize the memories
- Presence of personal resilience
- Environmental and Ecological Safety
- Emotional readiness
- Presence of depression only and absence of any emotional stress (Cz Location) and Trauma (O1) Location markers or history of trauma

5.5.1 Agreement to change

The Brain-Switch 2.0™ protocol begins with the agreement to change. Effective outcomes begins when agreement is not merely cognitive but also internal. All six cases experienced individualized symptoms of dysregulation. As much as they were aware of the symptoms, they were unable to resolve it cognitively or rationally. What maintains this disequilibrium between the conscious/external and the unconscious/internal turmoil is known as interoception. Interoception is the internal ability to perceive internal bodily states, affecting emotional consciousness, decision-making and psychological well-being (Critichley et al., 2017). Terasawa et al. (2017) considers interoception as the sensory modality through which individuals perceive internal physiological states, including sensations related to heartbeat, breathing and visceral processes. For the purpose of the study, this is an indication that as long as internal states are hypervigilant/ hyper-aroused or in a state being unsafe, the outcomes tend to be affected.

Step one of the protocol emphasizes the importance of eliciting the internal agreement to change. In this research, all the cases except case five had substantial time dedicated in eliciting the agreement to change. Case five in particular came in with a sense of urgency due to his emotional volatility and the presence of a minor under his care which poses an immediate risk to the child. He was exhibiting signs of shame and guilt with the diagnosis of depression and meltdowns. He appeared eagerly wanting to manage his emotional volatility fast that the researcher assumed that step one had been given, that the conscious and unconscious – between the rational mind and the internal physiological states were in alignment to the change. This is similar to the work of Joseph Wolpe in his pioneering techniques in muscle relaxation, drawing from the concept of mutual inhibition, which is fundamental to understand outcomes – the more relax, the fear diminishes, leading to better outcomes (Wolpe, 2017). When there is agreement rationally and internally, the whole person is primed for the change.

5.5.2 Openness to destabilize the memories

Step two in the protocol requires the individual to recall briefly the visual, auditory and visceral/kinesthetics sub-modality representation of the memory and then discarding it into the bin.

This interaction between sub-modalities (visual, auditory and visceral experiences) and the process of reconsolidation of memory is an important and key factor in the recovery as the recalled or recovered memories become malleable, neuronal circuits disrupted, and the altered before being reconsolidated again.

Mackay (2015), Mawla (2022) and Moinnereau (2023) and many other researchers have demonstrated that neuronal mechanisms underlying storage and memory recovery are intertwined with multisensory integration. Their research shows the power of representation of the brain is linked to conscious experiences and this suggests that variations in sensory experiences, such as the quality of visual or auditory entry, can fundamentally alter how memories are accessed, recalled and reconsolidated.

As step two involves discarding all recalled/remembered and reactivated memories, the effectiveness of the destabilization and reconsolidation of the memory cannot be under emphasized and ignored. In this step, the case studies indicated that by congruently facilitating

the discarding systematically, starting with all the visuals, followed by the auditory and finally visceral memories, neuronal circuits are disrupted. Case one, two and six saw the most clinically significant outcomes as they articulated consciously what were the events that are affecting them. Case five had ambiguity in being clear what to discard as he did not recognize the impact of his upbringing as being connected to his current triggers with his stepson.

For the process to be effective and impactful, facilitating a strong desire and willingness to discard the memories determines the quality of the change and transformation.

5.5.3 Presence of personal resilience

Resilience is a protective factor that allows people to cope with adversity and facilitates personal growth and change on a consistent basis. Ayed et al. (2019) defines resilience as the ability to adapt well in the face of adversity, trauma or significant sources of stress. As seen in the case studies, individuals with higher resilience levels are better positioned to engage in the therapeutic process (agreement to change) and are able to follow the steps of the protocol. Crane et al. (2019) suggests that those with higher levels of resilience can show greater opening to feedback and greater willingness to explore difficult emotions and thoughts. Ecker et al. (2022) attributes resilient individuals with the ability to modify memories and can engage in adaptive coping strategies that increases emotional resilience. All six case studies showed tremendous resilience in coping with their trauma, anxiety, depression and despite the severity of their symptoms, showed strong resilience to follow the Brain-Switch 2.0™ process and showed positive results, either in the post self-assessment tools or/and in the Clinical Q analysis.

5.5.4 Environmental and Ecological Safety

An underrated and often overlooked factor in the change process is the environment. Environmental influences have a profound impact on memory reconsolidation. Goldman et al. (2020) highlighted that contextual factor, such as social support and environmental stability, can improve the neurobiological foundations of memory processes and reconsolidation. Harvey et al., (2014). showed that reconsolidated memories in supportive environments are generally integrated more effectively than in stressful or insulating contexts. The presence of adverse environmental stimuli can exacerbate psychological distress, while ecological support contexts can facilitate recovery (Villain et al., 2018). In case five, the environment was not safe due to his stepson's constant acting out and aggressive harmful outburst, making it difficult to feel safe internally, triggering physiological and psychological responses that complicate the process of reconsolidation of memory (Agran, 2014). Ecologically, there was no support – adding to more hypervigilant states. On the contrary, safe environments can promote emotional regulation and resilience, improving the potential for adaptive changes in memory (Goldman & Fredrick-Keniston, 2020).

Furthermore, ecological safety significantly influences the psychological state of the individual and facilitates the healing process. Factors such as the availability of support social networks and the general sense of community can improve safety feelings, which is essential for an effective recovery of trauma and mental health (Armstrong, 2019). All the cases except for case five is indicative of the ecological safety for the reconsolidation of memory, at the end to improved mental wellness.

5.5.5 Emotional readiness and excitement

Lane et al. (2015) highlighted the role of emotional readiness and excitement as crucial factors in the reconsolidation of traumatic memories. The emotional readiness during memory recovery promotes synaptic changes that can lead to updated memory representations. Reviewing the six case studies, except for case five, all the other cases were highly emotionally motivated. Case five was emotionally muted as he remained shameful and guilty that he was not able to entertain the idea of excitement.

Emotional readiness can be nurtured and developed by facilitating the creation of a preferred image, employing the sensory processing field-engaging the visual, auditory and visceral sub-modalities. This ability to view possible future scenarios can improve its ability to plan effectively, because individuals are able to anticipate the consequences and modify their behavior accordingly. The ability to mentally visualize scenarios can have an impact not only in enhancing cognitive strategies, but also in creating emotional excitement that leads to better outcomes.

5.5.6 Presence of depression only and absence of any emotional stress (Cz Location) and Trauma (O1) Location markers or history of trauma

One data that stood out was case five. There was no evidence of emotional stress and trauma in the Cz and O1 location. The F4 Theta and Beta was very high, indicating a sudden surge of volatility when triggered and depression. The presence of depression minus the severe emotional stress or trauma markers suggests that clients with similar assessments and neurological marker would require a customized approach and allocating more time towards activating emotional readiness and excitement.

Is Brain-Switch 2.0™ effective then? The protocol is designed in such a manner that individuals can review traumatic memories safely, in a controlled systematic manner, discarding the visual, auditory and finally visceral/kinaesthetic components of the memories. The process reconsolidates the memories is via a content free manner – there is no need to relive and narrate the details of the events. This research and other research indicate that the Brain-Switch 2.0™ approach effectively take advantage of the principles of memory reconsolidation, a process that emphasizes how memories are not static, but adaptable and subject to change (Gray, 2022). When a memory is remembered, it becomes malleable for a brief period before it is consolidated once again. During this window, the Brain-Switch 2.0™ process can change the memory by reconsolidating it in a modified state, allowing a decrease in emotional intensity and a release of the trauma associated with the memory.

Brain-Switch 2.0™ operates with the premise that traumatic experiences are usually entangle with distressing emotions, leading to a debilitating impact on an individual's mental health. As highlighted in the case studies, individuals who suffer from PTSD and complex PTSD frequently report having intrusive memories that reactivate the trauma, increasing anxiety, depression and emotional dysregulation. Brain-Switch 2.0™ pattern interrupts this cycle. Neuroscience research supports the mechanisms of how emotional memories are processed within the brain. For example, studies suggest that the amygdala, responsible for regulating emotion, becomes excessively active in individuals with unresolved traumatic experiences (Aliko, 2022). The hippocampus facilitates the contextualization of memories,

which is particularly vital during memory reconsolidation. By using Brain-Switch 2.0™, individuals are able to amplify the cognitive contextualization, and reduce emotional activation, while updating the new perspective to the memory.

5.5.7 The Role of Content Free Memory Reconsolidation

The role of content free memory reconsolidation has been gaining in popularity. Traditional mainstream therapy for trauma and emotion-based issues like Trauma-Focused CBT, Prolonged Exposure Therapy and Cognitive Reprocessing usually deepen the content of traumatic memories, which may inadvertently lead to the exacerbation of symptoms, trigger the hyper-activation of the amygdala and unfortunely reconsolidates the memory in a maladaptive way (Pitman et al., 2012). The retelling of the event of the trauma or excessive focus on the emotions (amygdala centric) amplifies the symptoms and neurological circuits instead of calming and updating the neural circuits. By activating the emotions via the amygdala, the process instead causes more emotional dysregulation. The key in memory recosolidation process is to regulate the emotions, while allowing the prefrontal cortex and hippocampus reconsolidate a positive memory while in an emotional regulated state. Brain-Switch 2.0™ is a content-free approach that addresses the potential limitations inherent in the traditional talk therapies. Instead of talking, retelling and processing the deep-seated emotions, Brain-Switch 2.0™ focuses on staying focus on the present (activating the prefrontal cortex) while updating the maladpative memory through reconsolidation to a more positve memory (this occurs in the hippocampus). This is perhaps the simgle most important therapeutic reason to explain why Brain-Switch 2.0™ require only a few sessions to dissolve the trauma andd emotion-based issues. Furthermore, the entire therapeutic process is conducted in a safe, calm (individuals are in an emotionally regulated state) and under the control of the client/patient/subject (engagement of the prefrontal cortex) – where the materials to be discarded can be done in a slow, regulated state without the emotional activation. The individual are in control of the reactivating of any traumatic memories (all facilitated within a controlled framework), allowing the individual to process and modify these memories. This Brain-Switch 2.0™ process makes the memories less aversive, even neutral, effectively reshaping the emotional responses associated with these memories. This is very process where there is minimal amygdala activation and minimal negative reaction that facilitates the recovery of trauma and emotion-based issues. Brain-Switch 2.0™ is leveraging on discoveries found in neuroscience and integrates the Memory Reconsolidation principles, which undoubtedly points to the fact that Brain-Switch 2.0™ is a brain-science approach to dissolving trauma and emotion-based issues.

The results of the six case studies are very promising. This research supports the effectiveness of Brain-Switch 2.0™ in resolving trauma and emotion-based issues, noting that it requires a few sessions and can even be integrated into one intensive session to obtain a clinically significant result compared to traditional therapeutic methods. Brain-Switch 2.0™ alignment with the principles of neuroscience positions the technique as not only an effective therapeutic tool, but as an evidence -based practice that converges on the physiological understanding of brain function and memory reconsolidation processes.

As an inherent benefit build into the framework, Brain-Switch 2.0™ is a cost effective therapy, seen to be brief, from one to three interventions with Brain-Switch 2.0™. The Brain-Switch 2.0™ process indicate clinically significant outcomes, positioning it as an affordable technique. Brain-Switch 2.0™ is also a content free and easy to learn protocol. Brain-Switch

2.0™ is a jargon free and easily adapted to be used as a self-help/enhancing protocol. In other words, the individual can continue to use Brain-Switch 2.0™ on themselves whenever there is the presence of stress, sadness, anxiety or any other issues that are emotionally distressing. Even when there is an encounter with a traumatic episode, for example, automobile accident, fire, retrenchment etc., the Brain-Switch 2.0 ™ facilitates a memory reconsolidation while maintaining a strong connectivity with the prefrontal lobes. Hence, in a world where there is a growing need for affordable, fast and reliable treatment option, Brain-Switch 2.0™ has met the research objectives. This echoes the call from the World Health Organization (2019) to have universal health coverage involving access to quality and affordable care for mental health conditions in 12 countries to 100 million more people. The WHO seeks to scale-up quality interventions and services for people with mental health conditions, including substance use and neurological disorders.

5.6 Limitations

While this research demonstrated the clinical efficacy of Brain-Switch 2.0™ in the regulation of trauma and emotion-based issues, there are some limitations that ought to be addressed.

5.6.1 Research design

Lack of a larger scale study. The research aimed at exploring the clinical efficacy of six case studies in an actual psychotehrapy treatment facility. While the results are valid and encouraging, one major limitation with the methodology is the issue of generalization which potentially may not lead to findings that have no broader applicability beyond the six cases. Also, this study does not employ the strict quantitative approach to statistical analysis to ensure robustness, hence this research may appear as if the same levels of control or standardization in data collection and analysis processes may not be present.

5.6.2 Short-term vs Long-Term outcome study

This research focused on the immediate short-term post-outcomes and did not consider the long-term potential consequences that could emerge later in the process. Understanding how memories are changing over prolonged periods could produce vital information for therapeutic interventions, in particular, developing a teatment strategy and protocol. How would the outcomes be different if weekly Brain-Switch 2.0™ sessions were facilitated in a six-eight weeks timeframe? Would case five in particular see a drop in the F4-Theta and F4-Beta values if more sessions are provided? Would case four F4-Beta values increase or decrease with more sessions? How would the post assessment look like six months after the interventions? These are critical questions that this research did not answer.

5.6.3 Discarding the memories may not be robust

Brain-Switch 2.0™ employs the discarding of the sensory information of the memories represented by the visual, auditory and visceral sub-modalities within a controlled environment in a content free process. This process can introduce variability in results based on individual differences in memory processing. For example, different individuals may display various responses to the same reconsolidation intervention, influenced by factors such as pre-existing

psychological conditions or the specificities of their traumatic experiences. What if only partial memories were discarded? What if anxiety creates an active rumination that the discarding was insufficient? These are issues that was not addressed in the research.

5.6.4 Enhancing Cognitive Functioning post intervention via narration

During a traumatic experience, narrating the event in detail is discouraged as it activates the amygdala and reconsolidates the memory in a negative way. However, when the trauma has been dissolved and the is emotional regulation, encouraging narration of the pst trauma allows the prefrontal cortex to make meaning. The act of meaning creation transforms the fragmented nature of traumatic memories into a cohesive story that improves self-understanding and reflection. These stories are used to integrate the traumatic experience thus allowing individuals to derive from the past ideas and lessons of their suffering. Consequently, personal growth often follows this reconsolidation, because survivors develop a more in-depth understanding of their values, their relationships and their objectives in life.

Hence, the lack of emphasis encouraging narration of the memory post intervention is another limitation of the model. It is a limitation as it did not stress the positive benefits of engaging the prefrontal cortex in narrative practices. As was shown in the research findings, when the healed memories are reconsolidated, and with the return of personal self-organization, this organic post-traumatic growth permits further constructive integration of personal experiences into their narrative identity. Encouraging the expression and narration post trauma and emotion-based issues can be transformative, indicating how the mere fact of verbalizing the reconsolidated memory help build healthier self-identity. Hence, reconcolidated memories often lead to the activation of neural circuits associated with positive emotional responses, which, in turn, promote a stronger and stable emotional regulation. By encouraging the narration, individuals will be able to provide their personal reports of their traumatic events, in a safe environments post recovery. Hence, when the amygdala is not in a state of hyperarousal or experiencing an amygdala hijack, the individual can approach their traumatic memories with a level of cognitive awareness that allows the navigation and understanding of their feelings in a more integrated manner. Consequently, this promotes the integration of trauma in one's personal history, which is a significant aspect of the healing process.

In summary, the four limitations of the research method and process are:

- Research design
- Short-term vs Long-Term outcome study
- Discarding the memories may not be robust
- Lack of Cognitive Functioning post intervention via narration

Nevertheless, the benefits and efficacy of the Brain-Switch 2.0™ are evident and future directions of research should focus on incorporating the four limitations highlighted to further test and advance the academic and therapeutic efficacy to address trauma and emotion-based issues.

Chapter 6: Conclusion

This research set out to explore the clinical efficacy of Brain-Switch 2.0™ in regulating trauma and emotion-based issues. Six individuals were organically and naturally recruited when they contacted Neuro-Therapy Psychotherapy Centre for their mental health concerns. The ITQ, PHQ-9, GAD-7, DASS-21 and Clinical Q were administered before the start of the Brain-Switch 2.0™ process. The data collected represents the pre-treatment/pre-intervention scores. The pre scores identified a range of concerns, ranging from severe emotional stress, trauma, depression to emotional volatility. For the intervention process, case one received three weekly sessions of Brain-Switch 2.0™ followed by a post assessment one month after the last session. Case two to five received three Brain-Switch 2.0™ interventions within the same hour and case six received three Brain-Switch 2.0™ interventions on the same day with an interval of three-four hour between each session. A post assessment was completed one month after the session. The post assessmment involves administering the ITQ, PHQ-9, GAD-7, DASS-21 and Clinical Q. The data collected represent the post-interventiom scores. Comparison between the pre and post data are then analysed. The research data supporting the efficacy of Brain-Switch 2.0 is drawn from both qualitative and quantitative studies conducted with six individuals, three males and three females. This concluding chapter will summarize the findings from the research data, highlighting the efficacy of Brain-Switch 2.0™, and discuss its implications for mental health treatment, particularly in addressing trauma and emotional dysregulation.

6.1 Key findings

The research data together with the individual post assessment narrative demonstrates that Brain-Switch 2.0™ is effective in addressing trauma and emotion-based issues. Several key findings have emerged from the studies, which highlight the significant improvements in emotional regulation and trauma resolution among the six case studies.

6.1.1 Reduction in Trauma Symptoms

One of the most positive outcomes of the research was the reduction in trauma among the individuals who were assessed to have trauma symptoms (ITQ assessment) and neurological marker (clinical Q assessment). All reported a marked decrease in the intensity and frequency of flashbacks, intrusive memories, and hypervigilance. The data suggests that Brain-Switch 2.0™ is able to facilitate changes in brainwave patterns associated with trauma processing and reported symptoms, leading to a reduction in the emotional charge attached to traumatic memories.

6.1.2 Improved Emotional Regulation

Individuals who were struggling with emotional dysregulation -characterized by mood swings, irritability, and difficulty managing emotional responses, emotional meltdowns and self-harm - experienced significant improvements in their ability to regulate emotions. The Brain-Switch 2.0™ process led to better management over their emotional triggers and responses, with many reporting a greater sense of emotional stability. This result is consistent in the findings in memory reconsolidation and deactivation of the amygdala, which suggests that the reconsolidated memory updated the past events as an event in the past, which leads to better emotional regulation and resilience.

6.1.3 Reduction in Anxiety and Depression

The data reveals that with Brain-Switch 2.0™, all six case studies expressed a significant reduction in their symptoms of anxiety and/or depression. Many individuals reported feeling less overwhelmed by negative thoughts and emotions, and they were able to approach challenging situations with greater calm and clarity. The would be seen with the decreased in the PHQ-9, GAD-7 and DASS-21 scores post treatment.

6.1.4 Enhanced Cognitive Function and Clarity

In addition to emotional improvements, all noted an increase in cognitive clarity, mental focus, and an improved sense of overall well-being. The ability to focus, think clearly, and make decisions are common outcomes reported. This highlights the broader benefits of Brain-Switch 2.0™ in promoting cognitive health, particularly in individuals who have experienced emotional and traumatic disturbances.

6.1.5 Enhanced self-organization

Perhaps one of the most encouraging findings from the research is the enhancement in self-organization. The post follow-up assessment on the ITQ score revealed an average reduction of the c-PTSD scores by 9.33, with two of the six cases reported a decreased of 14 points in the disturbances in self-organization. With self-organization, some of the qualities observed were resilience, adaptability and self-discipline. Resilience, the ability to recover from setbacks and manage it cognitively was observed in the outcomes post Brain-Switch 2.0™. Adaptability refers to the ability to adapt to changing circumstances and grasp new challenges, a crucial trait in recovery was observed, for example, when case two was able to take actions to be part of a community that he belonged to. Finally, self-discipline underpins the commitment to maintain focus and consistency in pursuit of long-term objectives, thus strengthening a structured approach to better mental health and personal growth.

Though more research will be needed, with a controlled group and a larger sample size to test the robustness of the clinical efficacy on specific homogeneous issue like trauma, depression and anxiety separately, the results and findings of this research does show the contribution and efficacy of Brain-Switch 2.0™ in the regulation of trauma and emotion-based treatment and recovery.

Appendices

1. Summary Case Study (n=6, 3 males & 3 females) Data analysis Pre and Post Brain-Switch 2.0™ Intervention Data

Assessment Instrument	Case 1 Pre Results	Case 1 Post Results	Case 2 Pre Results	Case 2 Post Results	Case 3 Pre Results	Case 3 Post Results	Case 4 Pre Results	Case 4 Post Results	Case 5 Pre Results	Case 5 Post Results	Case 6 Pre Results	Case 6 Post Results
PHQ-9	19	4	10	3	10	5	12	7	10	10	11	2
GAD-7	8	0	11	3	18	7	11	8	8	5	15	5
DASS-21 Stress	16	2	16	3	22	5	14	7	20	15	40	5
PTSD	6	1	13	0	12	4	14	6	6	4	15	3
C-PTSD	17	6	12	0	21	7	7	4	9	7	18	4
Cz -Alpha Response Remarkable value <30	-12	46	-6	10	26	39	11	23	62	45	74	85
O1-Alpha Response Remarkable value <50	81	102	13	52	48	61	8	52	209	192	12	45
F4-Theta Remarkable value >15	12.5	14	-1	6	-17	5	3	-4	43	25	26	17
F4-Alpha Remarkable value >15	-4	11	-5	9	-10	5	-3	10	9	9	13	12
F4-Beta Remarkable value >15	4	14	10	11	-0.2	5	3	20	26	20	12	12

2. Assessment Instruments

International Trauma Questionnaire

Instructions: Please identify the experience that troubles you most and answer the questions in relation to this experience.

Brief description of the experience _____

When did the experience occur? (circle one)

a. less than 6 months ago
b. 6 to 12 months ago
c. 1 to 5 years ago
d. 5 to 10 years ago
e. 10 to 20 years ago
f. more than 20 years ago

Below are a number of problems that people sometimes report in response to traumatic or stressful life events. Please read each item carefully, then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

	Not at all	*A little bit*	*Moderately*	*Quite a bit*	*Extremely*
P1. Having upsetting dreams that replay part of the experience or are clearly related to the experience?	0	1	2	3	4
P2. Having powerful images or memories that sometimes come into your mind in which you feel the experience is happening again in the here and now?	0	1	2	3	4
P3. Avoiding internal reminders of the experience (for example, thoughts, feelings, or physical sensations)?	0	1	2	3	4
P4. Avoiding external reminders of the experience (for example, people, places, conversations, objects, activities, or situations)?	0	1	2	3	4
P5. Being "super-alert", watchful, or on guard?	0	1	2	3	4
P6. Feeling jumpy or easily startled?	0	1	2	3	4

In the past month have the above problems:

P7. Affected your relationships or social life?	0	1	2	3	4
P8. Affected your work or ability to work?	0	1	2	3	4
P9. Affected any other important part of your life such as parenting, or school or college work, or other important activities?	0	1	2	3	4

Below are problems that people who have had stressful or traumatic events sometimes experience. The questions refer to ways you typically feel, ways you typically think about yourself and ways you typically relate to others. Answer the following thinking about how true each statement is of you.

How true is this of you?	*Not at all*	*A little bit*	*Moderately*	*Quit a bit*	*Extremely*
C1. When I am upset, it takes me a long time to calm down.	0	1	2	3	4
C2. I feel numb or emotionally shut down.	0	1	2	3	4
C3. I feel like a failure.	0	1	2	3	4
C4. I feel worthless.	0	1	2	3	4
C5. I feel distant or cut off from people.	0	1	2	3	4
C6. I find it hard to stay emotionally close to people.	0	1	2	3	4

In the past month, have the above problems in emotions, in beliefs about yourself and in relationships:

C7. Created concern or distress about your relationships or social life?	0	1	2	3	4
C8. Affected your work or ability to work?	0	1	2	3	4
C9. Affected any other important parts of your life such as parenting, or school or college work, or other important activities?	0	1	2	3	4

3. PHQ-9

Over the last 2 weeks, how often have you been bothered by any of the following problems?
Please circle your answers.

PHQ-9	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things.	0	1	2	3
2. Feeling down, depressed, or hopeless.	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much.	0	1	2	3
4. Feeling tired or having little energy.	0	1	2	3
5. Poor appetite or overeating.	0	1	2	3
6. Feeling bad about yourself – or that you are a failure or have let yourself or your family down.	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television.	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed. Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual.	0	1	2	3
9. Thoughts that you would be better off dead, or of hurting yourself in some way.	0	1	2	3
Add the score for each column				

Total Score (add your column scores): _____

If you checked off any problems, how difficult have these made it for you to do your work, take care of things at home, or get along with other people? (Circle one)

Not difficult at all Somewhat difficult Very Difficult Extremely Difficult

4. General Anxiety Disorder -7 (GAD-7)

If you checked off any problems, how difficult have these made it for you to do your work, take care of things at home, or get along with other people? (Circle one)

Not difficult at all Somewhat difficult Very Difficult Extremely Difficult

---

Over the last 2 weeks, how often have you been bothered by any of the following problems?
Please circle your answers.

GAD-7	Not at all sure	Several days	Over half the days	Nearly every day
1. Feeling nervous, anxious, or on edge.	0	1	2	3
2. Not being able to stop or control worrying.	0	1	2	3
3. Worrying too much about different things.	0	1	2	3
4. Trouble relaxing.	0	1	2	3
5. Being so restless that it's hard to sit still.	0	1	2	3
6. Becoming easily annoyed or irritable.	0	1	2	3
7. Feeling afraid as if something awful might happen.	0	1	2	3
Add the score for each column				

Total Score (add your column scores): _____

If you checked off any problems, how difficult have these made it for you to do your work, take care of things at home, or get along with other people? (Circle one)

Not difficult at all Somewhat difficult Very Difficult Extremely Difficult

5. DASS-21

DASS21

Name: Date:

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you **over the past week**. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree or a good part of time
3 Applied to me very much or most of the time

1 (s)	I found it hard to wind down	0	1	2	3
2 (a)	I was aware of dryness of my mouth	0	1	2	3
3 (d)	I couldn't seem to experience any positive feeling at all	0	1	2	3
4 (a)	I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5 (d)	I found it difficult to work up the initiative to do things	0	1	2	3
6 (s)	I tended to over-react to situations	0	1	2	3
7 (a)	I experienced trembling (e.g. in the hands)	0	1	2	3
8 (s)	I felt that I was using a lot of nervous energy	0	1	2	3
9 (a)	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10 (d)	I felt that I had nothing to look forward to	0	1	2	3
11 (s)	I found myself getting agitated	0	1	2	3
12 (s)	I found it difficult to relax	0	1	2	3
13 (d)	I felt down-hearted and blue	0	1	2	3
14 (s)	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15 (a)	I felt I was close to panic	0	1	2	3
16 (d)	I was unable to become enthusiastic about anything	0	1	2	3
17 (d)	I felt I wasn't worth much as a person	0	1	2	3
18 (s)	I felt that I was rather touchy	0	1	2	3
19 (a)	I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)	0	1	2	3
20 (a)	I felt scared without any good reason	0	1	2	3
21 (d)	I felt that life was meaningless	0	1	2	3

6. Clinical Q Summary Chart

Clinical Q Normative and Remarkable Values Summary Guide

Clinical Q Probe Location	Normative value	Remarkable value	Clinical Implication if at Remarkable ranges
Cz-Alpha Response	Above 30	Less than 30	Exposure to severe emotional stressor
O1-Alpha Response	Above 50	Less than 50	Traumatic stress
F4-Theta	+- 15	Above 15	Emotional Volatility
F4-Alpha	+-15	Above 15	Emotional dysregulation
F4-Beta	+- 15	Above 15	Predisposition to depressed mood states

7. Brain-Switch 2.0™ Protocol

Step 1: Establishing Internal Agreements and Priming the Positive Outcomes of the Brain-Switch Process

1. Set up internal agreements with yourself (if you are doing the process yourself)/ or ask the recipient to seek an agreement to change and make a commitment to the change process with themselves.
2. Encourage the adoption of an open mind and receptive mindset
3. Co-create and establish the end in mind
4. Start by gazing gentle at mid-point (minimal eye movements encouraged)

Step 2: Releasing Visual, Auditory, and Kinesthetic Memories

To facilitate and encourage positive outcomes and transformation, elicit from the inner self:

a. permission to let go of the bad memories and emotions. Only proceed when permission is given.
b. If there are doubts, confusions-fears, facilitate an internal parts negotiation. The end goal is to have an outcome that is beneficial to both the conscious cognitive mind and internal protective mechanism.
c. create an old dirty bin on the right side of the brain / right hemisphere. **
d. proceed to discard the following in this order: all the visuals, all the auditory and finally all emotions connected with the problem

Step 3: First Brain-Switch: Switching from the Right Hemisphere to the Left Hemisphere

1. Invite the individuals to move the bin from the right to your left hemisphere in any way using their creative mind
2. Once on the left side/ hemisphere, invite the individual to check in one more time whether the contents can be destroyed. Seek another internal agreement to change

Step 4: Destroy and Discard the Contents and Bin

1. Elicit another agreement to change by inviting to go inwards one more time to check if there are any reason to hold on to the "issues". Only proceed when both the conscious and unconscious mind are in agreement to proceed
2. Using creativity and personal imagination, proceed to destroy the contents and bin. At the end, do another check to ensure that all are destroyed.
3. Ensure no debris is left behind, the left hemisphere is clear and clean.

Step 5: Creating your Preferred Reality in the Left Hemisphere

1. Create a treasure chest/box on the left side of the mind. This priceless treasure chest will be kept and not to be discarded
2. Deposit positive thoughts, positive self-narratives(schemas), ideas, convictions, feelings, aspirations, and an improved self- picture into the treasure chest.

Step 6: Second and Final Brain (Neural)-Switch: From the Left Hemisphere back to the Right Hemisphere

1. Shift the treasure box from the left to the right hemisphere
2. Allow the eyes to close, and remain grounded in the present
3. Imagine like osmosis, the contents of the treasure box merging with all of you and let it have its home in your heart
4. Visualize three empowering situations free from the issue, without the baggage of the past.
5. Allow the eyes to open and notice the internal and mental shifts

8. What practitioners are saying about Brain-Switch 2.0™

Joachim presents Brain-Switch 2.0™, an innovative approach to resolving trauma and emotional issues. Having witnessed Joachim's skilled application of these techniques firsthand, I can attest to their effectiveness. What sets Brain-Switch 2.0™ apart is its seamless integration of neuroscience, the limbic system, memory reconsolidation, and NLP principles.

Three key takeaways are:

1. The power of establishing internal agreements for change. Joachim emphasizes the importance of aligning conscious and unconscious motivations, creating a solid foundation for transformation. This resonates deeply with my own experiences in change work.

2. The effectiveness of releasing visual, auditory, and kinesthetic memories associated with trauma. By gently guiding individuals to let go of these sensory components, Joachim demonstrates how we can deactivate the amygdala's hyper-reactivity and allow the prefrontal cortex to take the lead.

3. The potential for rapid, lasting change. The case studies showcase the remarkable results that can be achieved in just one or a few sessions using Brain-Switch 2.0™. Joachim's clients experience newfound clarity, freedom from the grip of the past, and enhanced relationships.

As you embark on this transformative journey with Brain-Switch 2.0™, know that you are in the hands of a true master. I believe Brain-Switch 2.0™ will become an essential tool for therapists and a lifeline for those struggling with emotional pain. Joachim's contribution to the field of change work is truly remarkable, and I am grateful for our friendship and the opportunity to support his mission.

Dr Richard Nongard, Executive Director, International Certification Board for Clinical Hypnotherapists (ICBCH)

As a 14-year-old, I remember overthinking situations and being paralyzed by fear. It could be a simple thought like "my friend is not going to sit with me for lunch", and that thought would keep replaying in my head to the point that I would be incapable of thinking of anything else. Then I found this technique that helped me. I would imagine a room with a big door that could be bolted. I would imagine throwing that thought into the room and bolting the door so that the thought couldn't escape. If the thought came again, I would do the same.

Fast forward a few decades, as a therapist, I learnt Brain Switch 2.0™ from Joachim.

The mind can be trained to think less of worrying negative thoughts and more of empowering positive ones. I've used it in sessions with clients who struggled with overcoming thought patterns and emotions that they couldn't break through.

And the technique is steeped in neuroscience that it makes logical sense.

It uses the client's own resources, their creativity, their cognitions and their own will to create thought patterns that reflect what they would rather want in their life. And once they know the technique, they can do it by themselves in the future. Empowering the client!

Sapna Mathews, Lead Counsellor

My clinical outcomes and confidence as a psychotherapist have improved tremendously since I began incorporating Brain-Switch 2.0™ into my practice. This transformative method has not only elevated the effectiveness of my sessions but has also provided my clients with remarkable breakthroughs, especially those who have endured long-term emotional or physical pain and are finally ready to let go.

Many of my clients come into the therapy room carrying deep-seated fears, hopelessness, and emotional burdens they have struggled with for years. They often feel trapped in their suffering, uncertain about whether healing is even possible. However, after experiencing Brain-Switch 2.0™, they leave with an entirely different perspective—one of lightness, clarity, and renewed hope. The shift is often so profound that they are astonished at how much relief they can achieve in such a short period of time.

What makes Brain-Switch 2.0™ unique is that it does not require clients to verbalize or relive their pain in detail. Traditional therapy approaches often emphasize extensive discussion and analysis of past trauma, which can sometimes be retraumatizing. In contrast, Brain-Switch 2.0™ allows clients to release emotional burdens in a way that feels safe and empowering. They retain full control over what they choose to let go of, without needing to disclose personal details if they do not wish to.

As a therapist, this has been a game-changer. It means that I can support individuals without requiring them to recount painful memories, which can be especially beneficial for those who find it difficult to express their experiences in words. This process honours their personal boundaries while still facilitating deep emotional and psychological healing.

One of the most rewarding aspects of using Brain-Switch 2.0™ is witnessing the visible transformation in my clients. I have seen people walking in heavy with stress, grief, or trauma, only to leave with a newfound sense of peace and possibility. The shift is not just emotional - it often manifests physically, with clients reporting a release of tension in their bodies, improved energy levels, and an overall sense of relief.

Brain-Switch 2.0™ is also highly versatile. It is a process that I can safely use not only with individuals but also with couples and families. In relationship counselling, it helps partners navigate emotional barriers, release resentment, and reconnect with each other in a healthier way. For families, it fosters healing and understanding without requiring members to rehash past conflicts in a way that might trigger further distress.

By integrating Brain-Switch 2.0™ into my practice, I have been able to facilitate faster, more effective healing journeys for my clients. It empowers them to move forward, unburdened by past pain, and to see new possibilities for themselves. For me, as a therapist, it has reinforced my belief in the resilience of the human mind and the incredible capacity we all have for transformation.

Dawn Tan, Senior Psychotherapist, Clinical Supervisor and Scientific Hypnotherapist

Brain Switch 2.0 has been a transformative approach in my practice, particularly in reframing clients' negative thoughts, feelings, and behaviours. Its unique methodology provides effective techniques to help clients achieve their goals and create the quality of life they desire.

As a therapist, I find Brain-Switch 2.0™ invaluable in achieving therapeutic goals within a single session. It is a safe and effective tool to raise clients' self-empowerment, allowing clients to heal without needing to share their struggles or relive painful experiences. This creates a safe space for both the client and me, ensuring healing occurs without re-exposing them to distressing memories.

One of my 15-year-old clients shared her experience, saying, 'I don't know why, but I suddenly feel motivated to study and can now set realistic goals, unlike before.' She also mentioned that when she feels overwhelmed in class, she practices Brain Switch on her own, helping her regain focus and manage her emotions effectively. This technique empowers clients to become their own self-therapists, enabling them to navigate difficult situations, regulate their emotions, and prevent impulsive or harmful behaviours.

Additionally, Brain-Switch 2.0™ has been an essential self-care tool for me as a therapist. It allows me to regulate my emotions between sessions, quickly process previous sessions, and enter each new session with a fresh and focused mindset. It is a truly effective and safe approach for both clients and therapists alike.

Adelyn Tan, Founder and Principal Psychotherapist@ HiDolphin Counselling Centre

The beauty of Brain-Switch 2.0™ lies in its deeply salutogenic (wellness-based) approach, that honours the innate resources and strengths inherent within each client. It is an instrumental tool for me to facilitate "stuck" clients in vividly envisioning and experiencing an ideal Self who represents the positive changes they are seeking in their lives. This creates an intrinsic desire to change, not for external reasons, but for their own authentic wellbeing. As I continue witnessing clients destroy outdated associations with unhelpful memories, as well as embody helpful new resources on their own terms, I am constantly left in awe of the innate creativity, resilience and healing potential that lives within each unique individual - just waiting to be activated.

Tan Yi Shan, Psychotherapist & Corporate Wellness Trainer

My client is impressed and grateful, sharing that this brain switch experience has not only amazed them but also helped shift their mindset from negativity to a more positive outlook. Client shared that they made significant progress in overcoming their fears and pain and now feel more confident in moving forward with their life.

I find brain switch suitable, effective & safe for client who wants a fast therapy to deal with their traumatic memories, fears & emotional pain and not having to recount their traumatic stories to the therapist. This is definitely one of my toolkits for therapy.

Yeo Chee Keong, Counsellor

Using the Brain Switch 2.0™ technique has enhanced my ability to stay grounded and adaptable. As I witness the transformation in client, age 28, from anxiety-driven states to calm and empowered mindsets, it reinforces my belief in the potential for change within every individual. With consistency, they are deeply transformative. Additionally, the technique strengthens my own resilience as a counsellor. By helping clients embrace a shift in perspective, I too, benefit from reminding myself to stay positive, resilient, and open-minded throughout the counselling process.

For the client, the process of switching from anxiety-ridden thinking to a more positive, calm, and self-empowered mindset is transformative. Initially, the client may have been overwhelmed by negative thoughts that created a sense of helplessness or lack of control. Through Brain Switch 2.0™, it has helped the client to recognize that her thoughts are not permanent and that she can take an active role in shifting her mental state. During our sessions, we focused on identifying and labelling the anxious thoughts that were causing distress. Brain Switch 2.0 ™ has helped the client visualizes her anxiety as an object, that is, something tangible she could remove or discard. Through guided imagery, she "threw away" the anxiety and replaced it with a new positive image of herself. This image often involved visualizing themselves as calm, confident, and in control, projecting her desired qualities with each mental shift.

She has created her new patterns of thinking outside of our sessions. As the client learned to pause, recognize, and replace negative thoughts with positive ones, she has experienced a reduction in anxiety and a stronger sense of self-worth. She began to project a more positive image of herself, not defined by her anxieties but by her ability to control her mental and emotional responses. By the end of our work together, the client felt more empowered, with tools to manage stress and negative thought patterns. She left the session feeling a deeper connection to her own inner strength, with a renewed sense of calm and optimism for the future.

Michell Tay, Counsellor, Hypnotherapist & Clinical Supervisor

What I love most about Brain Switch 2.0™ is how clients can instill hope in and by themselves, with the therapist's facilitation. In therapy, especially with clients who have been through trauma, who are very depressed or suicidal, the most basic intention is to help them have even a glimpse of hope on their lives. This should not be done by the therapist's input on how clients should be hopeful, but everything and all the details shared that would assist in instilling this hope are given by the clients themselves in the process of Brain Switch 2.0™, naturally! I have one client in his early 20's who came in with suicidal thoughts, but through the process of Brain Switch 2.0™, I saw how his eyes lit up with hopes as he thought about his wishes and dreams; after getting rid of the negative self-talk, he had for many years as a result of receiving constant criticism growing up. I also had another client with anxiety issues found herself more emotionally regulated after Brain Switch 2.0™, she also used it on her own and found it useful in helping her feel calmer. Brain -Switch 2.0™ is multi-dimensional and encompasses both the past, the present and the future. This technique is so empowering for the Client, which aligns with my values and approach in helping my clients. I also love that it taps on the creativity side of the brain for some fun amidst a serious topic of trauma! Multi-dimensional indeed!

Kara Lee-Wong, Psychotherapist

Brain-Switch 2.0™ has lived up to its objective of resolving Trauma and emotion-based issues for the cases I have worked with thus far. It may seem deceptively straightforward, yet this "bottom-up approach or Limbic System therapy" is so very effective. I want to express my gratitude to Joachim Lee, the founder, for teaching, and guiding me and the rest of us, the alumni of Brain-Switch 2.0™ practitioners.

One of my primary population groups is couples. How do I help a couple who are on the verge of separation before I can use the more psychotherapeutic perspective of the Gottman Method of couples therapy? First, I need to stabilize them. This is where I find that Brain-Switch 2.0™ is a key instrument. I could engage the couple together using the 6-step protocol to achieve the transformation.

A couple came to see me recently. They were living separately then because they had a very serious altercation. There was some violence on the part of the husband. They were pushing and shoving and the man hit the wife. The husband assured me that it was not characterological, but it was situational. But it was more than once. The last straw culminated when the pet rabbit of the husband was "ill-treated". So, the wife moved out. The wife moved to her parent's home and came back to the matrimonial home daily only to feed the pet dog. However, one day when the man returned home from work, he found the rabbit, mauled to death. There was much blame game going back and forth between them. The man experienced much grief and trauma and faced difficulty in coping with work and with life going forward. My colleague helped him with grief therapy. I was then called in to help them with couple therapy. I did Brain-Switch 2.0™ with the couple together, after the third session when I sensed they were suffering trauma. Their PCL-5 confirms. The husband's trauma was due to the death of his beloved rabbit of 4 years. The wife because of the violence she experienced. Before we started the session, I spent some time establishing the internal consensus for the change. When the man had to create an Old Dirty Bin on the right side of the brain, it was a struggle. He was very emotional and was crying/mourning bitterly for the loss of his pet rabbit---he was letting go of the memory. For the wife, the disposal of her emotional and visceral feelings was hard. But she finally did. Releasing the emotional weight of the pain of the violence she experienced was very crucial for her. I allowed her time to cry her heart out. To let go. And take back control of the situation. We completed the switch, destroyed and discarded the contents of the bin; and created their own preferred reality. Then they completed the transformative journey by moving back to the starting position. I could see immediate relief in their faces. I will be starting with them using the Gottman Method Therapy soon since the amygdala I believe has been downregulated.

Nelson Choo, Head of Counselling

The efficacy of Brain-Switch 2.0™ lies in its ability to facilitate profound changes in patients' memories through the process of memory reconsolidation. As a practitioner, I am deeply appreciative of Joachim's generous contribution in sharing this innovative approach. Brain-Switch 2.0™ has seamlessly integrated into the eclectic framework of my private practice, enhancing the versatility and depth of the therapeutic interventions I offer.

One of the most remarkable aspects of Brain-Switch 2.0™ is its capacity to address severe phobias, often reducing distress levels from a SUDS (Subjective Units of Distress Scale) rating of 9 to 3 within a single session. Beyond phobias, it has demonstrated significant success in treating smoking addiction, trauma, anger management, and other challenges. What I find

particularly inspiring is how clients' creativity and ability to rewire their own outcomes often become a learning experience for me as a therapist, highlighting the collaborative nature of this process.

As an eclectic practitioner, I have also found ways to synergize Brain-Switch 2.0™ with other modalities, such as Hypnotherapy. During the final step of the Brain-Switch 2.0™ process, when the transition from the Left Hemisphere to the Right Hemisphere occurs and the client's eyes close, a natural trance-like state emerges. This presents an opportunity to incorporate hypnotherapy techniques, such as ego-strengthening and targeted suggestions, to further reinforce the desired changes. Metaphorically, it is akin to embedding a precious treasure deep within the unconscious mind, ensuring lasting impact.

To support sustained progress, clients are encouraged to engage in nightly self-reinforcement by visualizing a specific image (referencing to Picture A) before sleep. This practice aids the subconscious mind in solidifying the changes, fostering a more grounded and evolutionary transformation.

Over the past year, these two integrative approaches—combining Brain-Switch 2.0™ with Hypnotherapy and incorporating nightly visualization have yielded significant results for numerous clients. The consistent positive outcomes underscore the potential of Brain-Switch 2.0™ as a powerful tool in therapeutic practice, offering hope and tangible progress for individuals seeking meaningful change.

Nathanael Seers Ong, Founder and Principal Therapist @ Daseti

In 2023, I had the privilege of experiencing a Brain-Switch 2.0™ session with Joachim.

The simplicity of the process created a safe and comforting space for me to unshackle the chains of pain and despair. In one session, I emerged liberated—free to design and live a life of my own choosing.

Having undergone this transformative experience, I am convinced that Brain-Switch 2.0™ can be a game-changer in the journey of healing. Since then, I have empowered my clients in the same way, guiding them through their own breakthroughs with Brain-Switch 2.0™.

For each and every one of them, their stories took a new turn—a shift from darkness to renewal, from uncertainty to a deeper sense of self and purpose. They no longer see the future as just a distant hope or dream but as something tangible, something they can truly step into and embody.

Brain-Switch 2.0™ has allowed us to tap into our core, realize our fullest potential, and manifest the lives we truly deserve.

I am deeply grateful to have experienced the magic of Brain-Switch 2.0™ and even more so to be in a position to share it with my clients.

Casey Yong, Counsellor.

I regularly practice Brain Switch 2.0™ on myself, especially every night before bed. This technique helps me enhance my mental state, release stress, and recharge in a unique way. It has become an essential part of my routine, allowing me to clear my mind, reset my emotions, and prepare for the next day with renewed energy and focus.

When I guide my clients through the Brain Switch 2.0™ process, they are often amazed at how quickly it works. At first, they find it surprising that such a rapid method can bring about noticeable changes. However, once they experience the results—feeling more balanced, calm, and mentally refreshed—they understand its true power. Many of them come back expressing how transformative it has been in their daily lives.

Brain Switch 2.0™ is not just about relaxation; it's a powerful tool for mental resilience and emotional well-being. The speed of the process does not diminish its effectiveness; in fact, it enhances it. By quickly shifting mental states, individuals can break free from negative thought patterns, reduce anxiety, and regain a sense of control over their emotions.

One of the things I love most about this practice is witnessing the immediate impact it has on people. Whether they come in feeling overwhelmed, stressed, or emotionally drained, by the end of a session, they often describe feeling lighter, more present, and even energized. Some have said it feels like a mental reset button—allowing them to move forward with greater clarity and peace of mind.

Personally, I've found that incorporating Brain Switch 2.0™ into my nightly routine has significantly improved my overall well-being. It has taught me how to manage stress more effectively, stay emotionally balanced, and maintain a positive mindset even in challenging situations.

For those who are new to Brain Switch 2.0™, I always encourage them to keep an open mind. While the process is simple and fast, its effects can be profound. The mind is incredibly powerful, and when we learn how to guide it effectively, we unlock a new level of personal growth and transformation.

Dr Carol Ong, Scientific Hypnotherapist, Coach & Media Personality; Holds the Malaysia Book of Records as the first Certified Brain-Switch 2.0™ Practitioner

One of the benefits of Brain-Switch 2.0™ is that it strengthens the therapeutic alliance through collaboration and play.

Brain-Switch 2.0™ is a deeply collaborative process. Together, the therapist and client check for and establish agreement to change. Together, they co-create the client's "Picture A" (a visualization of their ideal future self that is free from the issue). Together, they work through the Brain-Switch 2.0™ process step by step, with the therapist giving guidance and bearing witness, while the client uses the power of their imagination to effect profound inner change.

Brain-Switch 2.0™ is also a form of therapeutic play for adults. My clients enjoy the process of creating, moving and destroying a "bin" into which they have discarded unwanted memories, and creating a "treasure chest" that stores their hopes and dreams. I never cease to be amazed at how creative some clients can be.

When I play along with the client's imagination - getting up from my chair to "move" the bin, reminding them not to destroy me along with their bin - not only do we have a good laugh, but the therapeutic alliance is also strengthened. Instead of bonding through pain, we bond through play.

Clients can often feel alone in their healing journey, that they have to do all "the work" on their own. Brain-Switch 2.0™ allows the therapist to be a part of the client's healing journey in a way that is uplifting and enjoyable for both.

Eunice Tan, Psychotherapist, Attachment & Trauma Therapist

Brain-Switch 2.0 (BrS2.0) is a great tool for therapists to help clients, without knowing the content of the dark moments in their past. This prevents clients from reliving their unpleasant moments by narrating their bitter stories. As a counsellor, I prefer to utilize BrS2.0 as it encourages the client to get involved in the process throughout, and thus in achieving their goals.

As clinicians, we believe that the client is the expert of their own life and can take decisions for themselves. BrS2.0 empowers the client to gain autonomy in making decisions for themselves, which they may have been initially deprived of, in the past. I have had clients who were victims of abuse or who had been under the control of authoritarian figures in their life.

BrS2.0 helps such clients to own their autonomy and voice in making choices for their preferred future. In celebrating their achievement, at the end of the process, clients are guided to embrace their new identity.

Sanjeevi Fernando, Counsellor

Bibliography

Adams, Shona & Allan, Steven. (2019). The effectiveness of Human Givens Rewind treatment for trauma. Mental Health Review Journal. 24. 228-242. 10.1108/MHRJ-10-2018-0033.

Agren, T. (2014). Human reconsolidation: A reactivation and update. Brain research bulletin, 105, 70-82.

Albalawi, K. S. (2014). Effectiveness of Neuro-Linguistic Programming on Enhancing University Students' Quality of Life. International Journal of Arts & Sciences, 7(6), 431.

Alberini C.M. & Ledoux J.E. (2013). Memory reconsolidation. Curr Biol. Sep 9;23(17): R746-50. doi: 0.1016/j.cub.2013.06.046. PMID: 24028957.

Ali, A. M., Alkhamees, A. A., Hori, H., Kim, Y., & Kunugi, H. (2021). The depression anxiety stress scale 21: development and validation of the depression anxiety stress scale 8-item in psychiatric patients and the general public for easier mental health measurement in a post COVID-19 world. International journal of environmental research and public health, 18(19), 10142.

Aliko, S. (2022). A Model of the Network Architecture of the Brain that Supports Natural Language Processing (Doctoral dissertation, UCL (University College London)).

American Psychological Association, Division 12 (Society of Clinical Psychology). (2017). Clinical practice guideline for the treatment of posttraumatic stress disorder (PTSD). https://www.apa.org/ptsd-guideline

American Psychiatric Association. (2022). Diagnostic and statistical manual of mental disorders (5th ed., text rev.). American Psychiatric Association.

Andreas, S. (2012)., Clinical Demonstration - Transforming Negative Self-Talk: Devils into Angels, Brief Therapy Conference.

Andreas, S. & Andreas, A. (2005) Basic NLP Techniques. The Heart of the Mind. 50 Psychological Techniques that Each Practicing Psychologist Should Know. Moscow: Yevroznak, 400 p.

Armstrong, C. (2019). Rethinking trauma treatment: Attachment, memory reconsolidation, and resilience. WW Norton & Company.

Arriaga XB, Kumashiro M, Simpson JA, & Overall NC. (2018) Revising Working Models Across Time: Relationship Situations That Enhance Attachment Security. Pers Soc Psychol Rev. 2018 Feb;22(1):71-96. doi: 10.1177/1088868317705257. Epub 2017 Jun 2. PMID: 28573961.

Astill Wright, L., Horstmann, L., Holmes, E. A., & Bisson, J. I. (2021). Consolidation/reconsolidation therapies for the prevention and treatment of PTSD and re-

experiencing: a systematic review and meta-analysis. Translational psychiatry, 11(1), 453.

Ayed, N., Toner, S., & Priebe, S. (2019). Conceptualizing resilience in adult mental health literature: A systematic review and narrative synthesis. Psychology and Psychotherapy: Theory, Research and Practice, 92(3), 299-341.

Axmacher, N., & Rasch, B. (Eds.). (2017). Cognitive neuroscience of memory consolidation. Cham, Switzerland: Springer International Publishing.

Babo-Rebelo, M., Richter, C. G., & Tallon-Baudry, C. (2016). Neural responses to heartbeats in the default network encode the self in spontaneous thoughts. Journal of Neuroscience, 36(30), 7829-7840.

Bachem, R., Levin, Y., Zerach, G., Cloitre, M., & Solomon, Z. (2021). The interpersonal implications of PTSD and complex PTSD: The role of disturbances in self-organization. Journal of Affective Disorders, 290, 149-156.

Bandler, R. (2020). Get the life you want: The secrets to quick and lasting life change with neuro-linguistic programming. Simon and Schuster.

Bandler, Richard; Grinder, John (1975a). The Structure of Magic I: A Book About Language and Therapy. Palo Alto, CA: Science & Behavior Books. ISBN 0-8314-0044-7.

Banz, L., Stefanovic, M., von Boeselager, M., Schäfer, I., Lotzin, A., Kleim, B., & Ehring, T. (2022). Effects of current treatments for trauma survivors with posttraumatic stress disorder on reducing a negative self-concept: a systematic review and meta-analysis. European journal of psychotraumatology, 13(2), 2122528.

Beadle, E. J., Ownsworth, T., Fleming, J., & Shum, D. (2016). The impact of traumatic brain injury on self-identity: A systematic review of the evidence for self-concept changes. The Journal of head trauma rehabilitation, 31(2), E12-E25.

Beard, C., Hsu, K. J., Rifkin, L. S., Busch, A. B., & Björgvinsson, T. (2016). Validation of the PHQ-9 in a psychiatric sample. Journal of affective disorders, 193, 267-273.

Brewin, C. R., Li, H., Ntarantana, V., Unsworth, C., & McNeilis, J. (2019). Is the public understanding of memory prone to widespread “myths”? Journal of Experimental Psychology: General, 148(12), 2245

Bodner, E., Bergman, Y. S., & Cohen-Fridel, S. (2014). Do attachment styles affect the presence and search for meaning in life? Journal of Happiness Studies, 15, 1041-1059.

Bonanno GA, Galea S, Bucciarelli A, Vlahov D. (2007). What predicts psychological resilience after disaster? The role of demographics, resources, and life stress. J Consult Clin Psychol. 2007 Oct;75(5):671-82. doi: 10.1037/0022-006X.75.5.671. PMID: 17907849.

Borgese, M. (2019). The relationship among prior trauma history, emerging adult self-concept, anxiety and depression. Hofstra University.

Boulakis, P. A., Mortaheb, S., Van Calster, L., Majerus, S., & Demertzi, A. (2023). Whole-brain deactivations precede uninduced mind-blanking reports. Journal of Neuroscience, 43(40), 6807-6815.

Brandão, M.L., Lovick, T.A. (2019). Role of the dorsal periaqueductal gray in posttraumatic stress disorder: mediation by dopamine and neurokinin. Transl Psychiatry **9**, 232. https://doi.org/10.1038/s41398-019-0565-8

Carroll, H. A., Hook, K., Perez, O. F. R., Denckla, C., Vince, C. C., Ghebrehiwet, S. & Henderson, D. C. (2020). Establishing reliability and validity for mental health screening instruments in resource-constrained settings: systematic review of the PHQ-9 and key recommendations. Psychiatry research, 291, 113236.

Chervonsky, E., & Hunt, C. (2019). Emotion regulation, mental health, and social wellbeing in a young adolescent sample: A concurrent and longitudinal investigation. Emotion, 19(2), 270.

Cloitre, M., Shevlin M., Brewin, C.R., Bisson, J.I., Roberts, N.P., Maercker, A., Karatzias, T. & Hyland, P. (2018). The International Trauma Questionnaire: Development of a self-report measure of ICD-11 PTSD and Complex PTSD. Acta Psychiatrica Scandinavica.138(6), 536–546. ttps://doi.org/10.1111/acps.12956

Coker, A. O., Coker, O. O., & Sanni, D. (2018). Psychometric properties of the 21-item depression anxiety stress scale (DASS-21). African Research Review, 12(2), 135-142.

Cohen, L., Leibu, O., Tanis, T., Ardalan, F., & Galynker, I. (2016). Disturbed self-concept mediates the relationship between childhood maltreatment and adult personality pathology. Comprehensive psychiatry, 68, 186-192.

Coyle, H., Traynor, V., & Solowij, N. (2015). Computerized and virtual reality cognitive training for individuals at high risk of cognitive decline: systematic review of the literature. The American Journal of Geriatric Psychiatry, 23(4), 335-359.

Crane, M. F., Searle, B. J., Kangas, M., & Nwiran, Y. (2019). How resilience is strengthened by exposure to stressors: The systematic self-reflection model of resilience strengthening. Anxiety, Stress, & Coping, 32(1), 1-17.

Crespo, M., & Fernández-Lansac, V. (2016). Memory and narrative of traumatic events: A literature review. Psychological trauma: Theory, research, practice, and policy, 8(2), 149.

Critchley, H. D., & Garfinkel, S. N. (2017). Interoception and emotion. Current opinion in psychology, 17, 7-14.

Debiec J, LeDoux J.E. & Nader K. (2002) Cellular and systems reconsolidation in the hippocampus. Neuron. Oct 24;36(3):527-38. doi: 10.1016/s0896-6273(02)01001-2. PMID: 12408854.

Derks, L., & Gray, R. (2022). Anxiety, depression, and phobias. In Neurolinguistic Programming in Clinical Settings (pp. 101-122). Routledge.

Dodgen, D., Donato, D., Kelly, N., La Greca, A., Morganstein, J., Reser, J. & Ursano, R. (2016). Mental health and well-being. US Global Change Research Program.

Doğan, R., Doğan, A., & Bağcı, N. (2022). The effect of neuro-linguistic programming on depression, anxiety and stress in liver transplant patients. Medical Records, 4(1), 102-110.

Duan, W., Guo, P., & Gan, P. (2015). Relationships among trait resilience, virtues, post-traumatic stress disorder, and post-traumatic growth. PloS one, 10(5), e0125707.

Ecker, B. (2015). Memory reconsolidation understood and misunderstood. International Journal of Neuropsychotherapy, 3(1), 2-46.

Ecker, B. and Vaz, A., 2022. Memory reconsolidation and the crisis of mechanism in psychotherapy. New Ideas in Psychology, 66, p.100945.

Elsey, J. W., & Kindt, M. (2017). Tackling maladaptive memories through reconsolidation: From neural to clinical science. Neurobiology of Learning and Memory, 142, 108-117.

Engelbrecht, A., & Jobson, L. (2020). Self-concept, post-traumatic self-appraisals and post-traumatic psychological adjustment: what are the relationships? Behavioral and cognitive psychotherapy, 48(4), 463-480.

Extremera, N., & Rey, L. (2015). The moderator role of emotion regulation ability in the link between stress and well-being. Frontiers in psychology, 6, 1632.

Fernández R.S., Pedreira M.E., Boccia M.M. (2017). Does reconsolidation occur in natural settings? Memory reconsolidation and anxiety disorders. Clin Psychol Rev. Nov; 57:45-58. doi: 10.1016/j.cpr.2017.08.004. PMID: 28822294.

Fink, G. (2016). Stress: Concepts, definition and history. Change.

Fraley, R. C., & Roisman, G. I. (2019). The development of adult attachment styles: Four lessons. Current opinion in psychology, 25, 26-30.

Frewen, P., & Lanius, R. (2015). Healing the traumatized self: consciousness, neuroscience, treatment (Norton series on interpersonal neurobiology). WW Norton & Company.

Fusina, F., Marino, M., Spironelli, C., & Angrilli, A. (2022). Ventral attention network correlates with high traits of emotion dysregulation in community women—A resting-state EEG study. Frontiers in Human Neuroscience, 16, 895034.

Goldman, R., & Fredrick-Keniston, A. (2020). Memory reconsolidation as a common change process. Neuroscience of enduring change: Implications for psychotherapy, 328-359.

Garrett, N., González-Garzón, A. M., Foulkes, L., Levita, L., & Sharot, T. (2018). Updating beliefs under perceived threat. Journal of Neuroscience, 38(36), 7901-7911.

Goleman, D. P. (1995). Emotional intelligence: Why it can matter more than IQ for character, health and lifelong achievement. New York: Bantam Books.

Gray, R., & Bourke, F. (2015). Remediation of intrusive symptoms of PTSD in fewer than five sessions: A 30-person pre-pilot study of the RTM Protocol™. Journal of Military, Veteran and Family Health, 1(2), 85-92.doi:10.3138/jmvfh.3119.

Gray, R., & Liotta, R. (2012). PTSD: Extinction, Reconsolidation and the Visual-Kinesthetic Dissociation Protocol. *Traumatology*, 18(2), 3-16. doi: 10.1177/1534765611431835.

Grimley, B. (2016). Removal of PTSD Symptoms in a Client Using Neuro-Linguistic Programming. Journal of Experiential Psychotherapy,19(3).

Gross, J. J. (2014). Emotion regulation: Conceptual and empirical foundations. Handbook of emotion regulation, 2, 3-20.

Gisquet-Verrier, P., & Riccio, D. C. (2018). Memory integration: An alternative to the consolidation/reconsolidation hypothesis. Progress in Neurobiology, 171, 15-31.

Goldman, R., & Fredrick-Keniston, A. (2020). Memory reconsolidation as a common change process. Neuroscience of enduring change: Implications for Psychotherapy, 328-359.

Harvey, A. G., Lee, J., Williams, J., Hollon, S. D., Walker, M. P., Thompson, M. A., & Smith, R. (2014). Improving outcome of psychosocial treatments by enhancing memory and learning. Perspectives on Psychological Science, 9(2), 161-179.

Haubrich, J., & Nader, K. (2018). Memory reconsolidation. Behavioral neuroscience of learning and memory, 151-176.

Henson, C., Truchot, D., & Canevello, A. (2021). What promotes post traumatic growth? A systematic review. European Journal of Trauma & Dissociation, 5(4), 100195.

Hiser, J., & Koenigs, M. (2018). The multifaceted role of the ventromedial prefrontal cortex in emotion, decision making, social cognition, and psychopathology. Biological psychiatry, 83(8), 638-647.

Hossain, S., Anjum, A., Hasan, M. T., Uddin, M. E., Hossain, M. S., & Sikder, M. T. (2020). Self-perception of physical health conditions and its association with depression and anxiety among Bangladeshi university students. Journal of affective disorders, 263, 282-288.

Houben, M., Van Den Noortgate, W., & Kuppens, P. (2015). The relation between short-term emotion dynamics and psychological well-being: A meta-analysis. Psychological bulletin, 141(4), 901.

Houle, I., & Philippe, F. L. (2020). Is the negative always that bad? Or how emotion regulation and integration of negative memories can positively affect well-being. Journal of Personality, 88(5), 965-977.

Hovens, J. G., Giltay, E. J., Spinhoven, P., van Hemert, A. M., & Penninx, B. W. (2015). Impact of childhood life events and childhood trauma on the onset and recurrence of depressive and anxiety disorders. The Journal of clinical psychiatry, 76(7), 8559.

Huh, H. J., Kim, K. H., Lee, H. K., & Chae, J. H. (2017). The relationship between childhood trauma and the severity of adulthood depression and anxiety symptoms in a clinical sample: The mediating role of cognitive emotion regulation strategies. Journal of affective disorders, 213, 44-50.

Hupbach, A., Gomez, R., & Nadel, L. (2015). Memory reconsolidation. The Wiley handbook on the cognitive neuroscience of memory, 244-264.

Hyland, P., Shevlin, M., Cloitre, M., Karatzias, T., Vallières, F., McGinty, G., ... & Power, J. M. (2019). Quality not quantity: loneliness subtypes, psychological trauma, and mental health in the US adult population. Social psychiatry and psychiatric epidemiology, 54, 1089-1099.

Immordino-Yang, M. H. (2016). Emotion, sociality, and the brain's default mode network: Insights for educational practice and policy. Policy Insights from the Behavioral and Brain Sciences, 3(2), 211-219.

iMotions. (2019). EEG: The Complete Pocket Guide Manual.

Iyadurai, L., Visser, R. M., Lau-Zhu, A., Porcheret, K., Horsch, A., Holmes, E. A., & James, E. L. (2019). Intrusive memories of trauma: A target for research bridging cognitive science and its clinical application. Clinical psychology review, 69, 67-82.

Institute of Health Metrics and Evaluation. Global Health Data Exchange (GHDx), (https://vizhub.healthdata.org/gbd-results/, accessed 14 May 2022).

Jayawickreme, E., Infurna, F. J., Alajak, K., Blackie, L. E., Chopik, W. J., Chung, J. M., ... & Zonneveld, R. (2021). Post-traumatic growth as positive personality change: Challenges, opportunities, and recommendations. Journal of personality, 89(1), 145-165.

Kida, S., 2019. Reconsolidation/destabilization, extinction and forgetting of fear memory as therapeutic targets for PTSD. Psychopharmacology, 236(1), pp.49-57.

Kindt, M., Soeter, M. & Vervliet, B. Beyond extinction: erasing human fear responses and preventing the return of fear. Nat Neurosci 12, 256–258 (2009). https://doi.org/10.1038/nn.2271

Kira, I. (2019). Toward an integrative theory of self-identity and identity stressors and traumas and their mental health dynamics. Psychology, 10(04), 385.

Klem G.H., Lüders H.O., Jasper H.H., Elger C. (1999). The ten-twenty electrode system of the International Federation. The International Federation of Clinical Neurophysiology. Electroencephalogr Clin Neurophysiol Suppl. 52:3-6. PMID: 10590970.

Kliethermes, M., Schacht, M., & Drewry, K. (2014). Complex trauma. Child and Adolescent Psychiatric Clinics, 23(2), 339-361.

Kline AC, Cooper AA, Rytwinksi NK, Feeny NC. Long-term efficacy of psychotherapy for posttraumatic stress disorder: A meta-analysis of randomized controlled trials. Clin Psychol Rev. 2018 Feb; 59:30-40. doi: 10.1016/j.cpr.2017.10.009. Epub 2017 Nov 21. PMID: 29169664; PMCID: PMC5741501.

Koenen, KC., Ratanatharathorn A., Ng L., McLaughlin KA., Bromet EJ., Stein DJ, et al. (2017). Posttraumatic stress disorder in the World Mental Health Surveys. Psychol Med. Oct;47(13):2260–74. doi:10.1017/S0033291717000708.

Kopańska, M., Ochojska, D., Dejnowicz-Velitchkov, A., & Banaś-Ząbczyk, A. (2022). Quantitative electroencephalography (QEEG) as an innovative diagnostic tool in mental disorders. International Journal of Environmental Research and Public Health, 19(4), 2465.

Kopanska, M., Ochojska, D., Trojniak, J., Sarzynska, I., & Szczygielski, J. (2024). The Role of Quantitative Electroencephalography in Diagnostic Workup of Mental Disorders. Journal of Physiology & Pharmacology, 75(4).

Kouvelis, G., & Kangas, M. (2021). Evaluating the association between interpersonal trauma and self-identity: A systematic review. Traumatology, 27(2), 118.

Krause-Utz, A., Veer, I. M., Rombouts, S. A. R. B., Bohus, M., Schmahl, C., & Elzinga, B. M. (2014). Amygdala and anterior cingulate resting-state functional connectivity in borderline personality disorder patients with a history of interpersonal trauma. Psychological medicine, 44(13), 2889-2901.

Lane, R. D., Ryan, L., Nadel, L., & Greenberg, L. (2015). Memory reconsolidation, emotional arousal, and the process of change in psychotherapy: New insights from brain science. Behavioral and brain sciences, 38, e1.

Lane, R. D. (2018). From reconstruction to construction: The power of corrective emotional experiences in memory reconsolidation and enduring change. Journal of the American Psychoanalytic Association, 66(3), 507-516.

Lanius, R. A., Terpou, B. A., & McKinnon, M. C. (2020). The sense of self in the aftermath of trauma: Lessons from the default mode network in posttraumatic stress disorder. European Journal of Psychotraumatology, 11(1), 1807703.

Lanius, R. A., Frewen, P. A., Tursich, M., Jetly, R., & McKinnon, M. C. (2015). Restoring large-scale brain networks in PTSD and related disorders: a proposal for

neuroscientifically-informed treatment interventions. European journal of psychotraumatology, 6(1), 27313.

LeDoux J.E. (2015) Anxious: Using the Brain to Understand and Treat Fear and Anxiety. New York: Viking.

Lee, D. (2019). The convergent, discriminant, and nomological validity of the Depression Anxiety Stress Scales-21 (DASS-21). Journal of affective disorders, 259, 136-142.

Lee, J. L., Nader, K., & Schiller, D. (2017). An update on memory reconsolidation updating. Trends in cognitive sciences, 21(7), 531-545.

Lee,J. (2024). Brain-Switch 2.0. Effective method to resolve trauma and emotion-based issues.

Levis, B., Benedetti, A., & Thombs, B. D. (2019). Accuracy of Patient Health Questionnaire-9 (PHQ-9) for screening to detect major depression: individual participant data meta-analysis. bmj, 365.

Li, W., Mai, X., & Liu, C. (2014). The default mode network and social understanding of others: what do brain connectivity studies tell us. Frontiers in human neuroscience, 8, 74.

Lodi-Smith, J., & DeMarree, K. G. (Eds.). (2018). Self-concept clarity: Perspectives on assessment, research, and applications. Springer.

Lou, Y. (2023). Depression and self-knowledge: behavioral and brain responses of reflected self-evaluation and implicit self-esteem in sub-clinical depression. JYU Dissertations.

Lovibond, S.H. & Lovibond, P.F. (1995). Manual for the Depression Anxiety Stress Scales (2nd. Ed.). Sydney: Psychology Foundation.

MacKay, D. M. (2015). Structure and Function of Brain Systems for Conscious and Nonconscious Representation. The Brain's Representational Power: On Consciousness and the Integration of Modalities, 131.

Manea, L., Gilbody, S., & McMillan, D. (2015). A diagnostic meta-analysis of the Patient Health Questionnaire-9 (PHQ-9) algorithm scoring method as a screen for depression. General hospital psychiatry, 37(1), 67-75.

Masten, A. S., & Cicchetti, D. (2016). Resilience in development: Progress and transformation. Developmental psychopathology: Risk, resilience, and intervention, 4, 271-333.

Mawla, I. (2022). A multimodal examination of functional brain and neurochemical mechanisms underlying nociplastic pain (Doctoral dissertation).

Meir Drexler, S., & Wolf, O. T. (2018). Behavioral disruption of memory reconsolidation: From bench to bedside and back again. Behavioral neuroscience, 132(1), 13.

Melamed, D. M., Botting, J., Lofthouse, K., Pass, L., & Meiser-Stedman, R. (2024). The relationship between negative self-concept, trauma, and maltreatment in children and adolescents: a meta-analysis. Clinical child and family psychology review, 27(1), 220-234.

Menon, V. (2023). 20 years of the default mode network: A review and synthesis, Neuron, Volume 111, Issue 16. Pages 2469-2487, ISSN 0896-6273, https://doi.org/10.1016/j.neuron.2023.04.023.

Moinnereau, M. A. (2023). Neurophysiological indicators to assess quality-of-experience based on human influential factors in virtual reality (Doctoral dissertation, Institut National de la Recherche Scientifique (Canada)).

Mónaco, E., Schoeps, K., & Montoya-Castilla, I. (2019). Attachment styles and well-being in adolescents: How does emotional development affect this relationship? International journal of environmental research and public health, 16(14), 2554.

Muss, D. (1991). A new technique for treating post-traumatic stress disorder. British Journal of Clinical Psychology, 30(1), 91-92.

Muss, D. (2002). The rewind technique in the treatment of posttraumatic stress disorder: Methods and application. In C. R. Figley (Ed.), Brief treatments for the traumatized (pp. 306-314). Westport, CT: Greenwood.

Nader, K. (2015). Reconsolidation and the dynamic nature of memory. Cold Spring Harbor Perspectives in Biology, 7(10), a021782.

Nompo, R. S., Pragholapati, A., & Thome, A. L. (2021). Effect of neuro-linguistic programming (NLP) on anxiety: a systematic literature review. KnE Life Sciences, 496-507.

Orji, L. C., & Ita, U. A. (2024). Amygdala Hijack: Contemporary insights into causes, correlates and consequences. Midwifery, 7(3), 102-111.

Panlilio, C. C., Ferrara, A., & MacNeill, L. (2019). Trauma, self-regulation, and learning. Trauma-informed schools: Integrating child maltreatment prevention, detection, and intervention, 61-78.

Peng, Y., Lu, Y., Wei, W., Yu, J., Wang, D., Xiao, Y. & Wang, Z. (2015) The Effect of a Brief Intervention for Patients with Ischemic Stroke: A Randomized Controlled Trial. Journal of Stroke and Cerebrovascular Diseases, 24(8), 1793–1802.

Peters, D.H. (2014). The application of systems thinking in health: why use systems thinking? Health Research Policy and Systems, 12, 1-6. https://doi.org/10.1186/1478-4505-12-1

Pitman, R. K., Schiller, D., & Hupbach, A. (2012). Memory reconsolidation and the need for context: Reconsolidation of emotional memories. Psychological Science, 23(12), 1336–1343. https://doi.org/10.1177/0956797612458329

Plummer, F., Manea, L., Trepel, D. & McMillan, D. (2016). Screening for anxiety disorders with the GAD-7 and GAD-2: A systematic review and diagnostic metaanalysis. General Hospital Psychiatry, 39, 24-31. https://doi.org/10.1016/j.genhosppsych.2015.12.002

Pyszczynski, T., & Taylor, J. (2016). When the buffer breaks: Disrupted terror management in posttraumatic stress disorder. Current Directions in Psychological Science, 25(4), 286-290.

Raichle, M. E.; MacLeod, A. M.; Snyder, A. Z.; Powers, W. J.; Gusnard, D. A.; Shulman, G. L. (2001). "Inaugural Article: A default mode of brain function". Proceedings of the National Academy of Sciences. 98 (2): 676–82.

Rhoton, R. & Gentry, J.E., (2021). Trauma Competency for the 21st Century: A Salutogenic Approach to Treatment. Denver, CO: Outskirts Press.

Saarimäki, H., Gotsopoulos, A., Jääskeläinen, P., Lampinen, J., Vuilleumier, P., Hari, R., Sams, M. and Nummenmaa, L. (2016) Discrete Neural Signatures of Basic Emotions, Cerebral Cortex, Volume 26, Issue 6, June, Pages 2563–2573, https://doi.org/10.1093/cercor/bhv086

Schiller D., Kanen J.W., LeDoux J.E., Monfils M.M., & Phelps E.A. (2013) Extinction during reconsolidation of threat memory diminishes prefrontal cortex involvement. Proc Natl Acad Sci USA 110:20040-20045.

Schilbach, L., Eickhoff, S., Rotarska-Jagiela, A., Fink, G. and Vogeley, K. (2008) Minds at rest? Social cognition as the default mode of cognizing and its putative relationship to the "default system" of the brain. Consciousness and Cognition, Volume 17, Issue 2, Pages 457-467, ISSN 1053-8100,

Schwabe, L., Nader, K., & Pruessner, J. C. (2014). Reconsolidation of human memory: brain mechanisms and clinical relevance. Biological psychiatry, 76(4), 274-280.

Scholten, S., Velten, J., Bieda, A., Zhang, X. C., & Margraf, J. (2017). Testing measurement invariance of the Depression, Anxiety, and Stress Scales (DASS-21) across four countries. Psychological assessment, 29(11), 1376.

Shah, N., Cader, M., Andrews, B., McCabe, R., & Stewart-Brown, S. L. (2021). Short Warwick-Edinburgh Mental Well-being Scale (SWEMWBS): performance in a clinical sample in relation to PHQ-9 and GAD-7. Health and quality of life outcomes, 19, 1-9.

Slade, A. (2014). Imagining fear: Attachment, threat, and psychic experience. Psychoanalytic dialogues, 24(3), 253-266.

Spitzer, R., Williams, J., Kroenke, K. and colleagues. (1999) Pfizer Inc.

Swingle, P. (2014). Clinical versus Normative Databases: Case Studies of Clinical Q Assessments. ISNR NeuroConnections. 72-78.

Swingle, P. G. (2015). Adding neurotherapy to your practice. New York, NY: Springer.

Swingle, P. G. (2016). Neurotherapy for Clinicians in the Trenches: The Clinical Q and Braindriving. In Handbook of Clinical QEEG and Neurotherapy (pp. 436-452). Routledge.

Swingle, P. G. (2019). Do you think we can get the brain back into neurotherapy? Neurofeedback: The First Fifty Years, 435.

Takehara-Nishiuchi, K. (2021). Neurobiology of systems memory consolidation. European Journal of Neuroscience, 54(8), 6850-6863.

Taylor, C. D., Bee, P., & Haddock, G. (2017). Does schema therapy change schemas and symptoms? A systematic review across mental health disorders. Psychology and Psychotherapy: Theory, Research and Practice, 90(3), 456-479.

Teicher, M. H., Samson, J. A., Polcari, A., & McGreenery, C. E. (2006). Sticks and stones: Associations between early life adversity and adult depression. Biological Psychiatry, 59(8), 722-729. https://doi.org/10.1016/j.biopsych.2005.10.020

Torregrossa, M. M., & Taylor, J. R. (2016). Neuroscience of learning and memory for addiction medicine: from habit formation to memory reconsolidation. Progress in brain research, 223, 91-113.

Treanor, M., Brown, L. A., Rissman, J., & Craske, M. G. (2017). Can memories of traumatic experiences or addiction be erased or modified? A critical review of research on the disruption of memory reconsolidation and its applications. Perspectives on Psychological Science, 12(2), 290-305.

Van der Heijden, A. C., Van der Werf, Y. D., Van den Heuvel, O. A., Talamini, L. M., & van Marle, H. J. (2024). Targeted memory reactivation to augment treatment in post-traumatic stress disorder. Current Biology, 34(16), 3735-3746.

Van der Kolk, B. A. (2014). The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma. Viking. ISBN 9780670785933.

Van Weert, J. C., Van Munster, B. C., Sanders, R., Spijker, R., Hooft, L., & Jansen, J. (2016). Decision aids to help older people make health decisions: a systematic review and meta-analysis. BMC medical informatics and decision making, 16, 1-20.

Vansh, B., Katherine L. M., Jonathan L., Dong-Youl, K., Shivani, G., John M.W., Jacob L., Vanessa M.B, Stephen M. L., Brooks, C., & Pearl H. C. (2025). Reinforcement learning processes as forecasters of depression remission. Journal of Affective Disorders, Volume 368, Pages 829-837, ISSN 0165-0327, https://doi.org/10.1016/j.jad.2024.09.066.

Villalta, L., Smith, P., Hickin, N., & Stringaris, A. (2018). Emotion regulation difficulties in traumatized youth: A meta-analysis and conceptual review. European child & adolescent psychiatry, 27, 527-544.

Villain, H., Benkahoul, A., Birmes, P., Ferry, B., & Roullet, P. (2018). Influence of early stress on memory reconsolidation: implications for post-traumatic stress disorder treatment. PLoS One, 13(1), e0191563

Vogt, B., Vogt, L., & Laureys, S. (2006). Cytology and functionally correlated circuits of human posterior cingulate areas. Neuroimage, Volume 29, Issue 2,Pages 452-466, ISSN 1053-8119. https://doi.org/10.1016/j.neuroimage.2005.07.048.

Wang, S.H., (2022). Lose the fear and boost the everyday memory through memory destabilisation and reconsolidation. Brain Research Bulletin, 190, pp.134-139.

Woldetensay, Y. K., Belachew, T., Tesfaye, M., Spielman, K., Biesalski, H. K., Kantelhardt, E. J., & Scherbaum, V. (2018). Validation of the Patient Health Questionnaire (PHQ-9) as a screening tool for depression in pregnant women: Afaan Oromo version. PloS one, 13(2), e0191782.

Wang, X., Lee, M. Y., & Yates, N. (2019). From past trauma to post-traumatic growth: The role of self in participants with serious mental illnesses. Social Work in Mental Health, 17(2), 149-172.

World Health Organization. (2019). Mental health: Strengthening our response. https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response

World Health Organization. (2022). International classification of diseases for mortality and morbidity statistics (11th rev.). World Health Organization. https://icd.who.int

Wolpe, J. (2017). Reciprocal inhibition as the main basis of psychotherapeutic effects. Experimentation and Innovation in Psychotherapy, 72(2), 251.

Ybias, C. F., Ortibano, M. T., & Madrigal, D. V. (2024). The Effect of Integrated-Neuro-Linguistic Programming as Supplementary Intervention for Individuals with Symptoms of Depression. Technium Soc. Sci. J., 60, 122.

Yoder, R. (2020). Evidence-Based Diagnosis of Posttraumatic Stress Disorder Using Quantitative Electroencephalography.