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Neurointegral - Bio Feedback in Mental Health (Case Study - 4)

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ABSTRACT: Life would be simple indeed if our needs were automatically gratified. But, as we know, many obstacles, both personal and environmental, prevent this. Such obstacles place demands on us and can lead to the experience of stress. The term, stress has typically been used to refer both to demands placed on an organism and organism's internal biological responses to such demands. To what extent are we cogent, poignant or intuitive beings? In these disordered times, humankind needs therapeutic and peace more than ever. Biology is truly a land of unlimited possibilities. Neuroscience is witness to the fact that time has come for an examination of cerebral mechanisms that are capable of coping with mental health crisis and traumatic events in the life history of human beings. The interactive dialogue between Biology, Neurosciences, Psychology, AI, Computing and neuro - health management has enabled a 360 - degree scan of mental health from prism of neurofeedback and bio- feedback. Neurobiological mechanisms through which psychological changes occur do open new vistas for explorations in mental health. By coming simultaneously in neurofeedback and bio - feedback, we not only transform lives individually, but we intertwine a coverlet of luminosity that covers all of human race. This paper is based on a case study of a Subject who is a case of anorexia nervosa reflected in symptoms of melancholy, apprehension and other frame of mind disorders. Paper examines and put forwards substantiation (response to many absorbing questions) that adaptive neurosciences and neurointegral methodology is a low – cost and effective approach to manage such cases.

KEYWORDS: Anorexia Nervosa, Mental Health, Mood Disorders, Adaptive Neurosciences and Neurointegral Methodology.

“Mental health is a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community. It is an integral component of health and well-being that underpins our individual and collective abilities to make decisions, build relationships and shape the world we live in. Mental health is a basic human right. And it is crucial to personal, community and socio-economic development”.

..... World Health Organization

I. INTRODUCTION

Adapted from neurosciences, neurointegral methodology is a non - invasive approach to take holistic care of mental health aspects. A combination of Biology, Neurosciences, Psychology, AI, Computing and neuro - health management, primarily key elements that drive intervention's effect, approach adopts neurofeedback (type of biofeedback that focuses on neuronal activity of brain. The training method is based on reinforcement learning, where real-time feedback provided to the trainee is supposed to reward and reinforce desired brain activity or inhibit unfavorable activity patterns; Wikipedia) and Biofeedback (technique of gaining greater awareness of many physiological functions of one's own body by using electronic or other instruments, and with goal of being able to manipulate body's systems at will; Wikipedia). World Health Organization professes that there is an imperative need for; affordable, effective and feasible strategies exist to promote, protect and restore mental health, action on mental health is indisputable and urgent, mental health has intrinsic and instrumental value and is integral to well-being and mental health is determined by complex interplay of individual, social and structural stresses and vulnerabilities. The primary tool (Neurointegral Methodology) is based on adapted neurosciences and enables to study (neuroscience-based therapy sessions) mental health in its entirety (produce more normal or optimal brain wave patterns).

The Case

“The impression that we are able to freely choose between different possible courses of action is fundamental to our mental life. However, it has been suggested that this subjective experience of freedom is no more than an illusion and that our actions are initiated by unconscious mental processes long before we become aware of our intention to act”.

..... Haynes

This is the case of a 28 years old Female Student Subject (now 32 years). Subject does suffer from emotional issues (Neuro-Emotional Technique is not ruled out ab initio in situ). Emotional arousal is one of the most frequent causes of stress. The physiological reactions that accompany emotions and stress are regulated by the two parts of the Autonomic Nervous System (ANS) – sympathetic and parasympathetic systems. Activation of the sympathetic nervous system readies body for vigorous activities,

producing such reactions as increases in heart rate, blood pressure, and respiration. In contrast, activation of the parasympathetic nervous system influences activity related to restoration of the body's resources. Research findings indicate that dissimilar emotions, and thus stress, are associated with dissimilar physiological reactions and patterns of brain activity. Positive emotional reactions are associated with greater activation of left cerebral hemisphere, while negative emotional reactions are associated with greater activation of the right cerebral hemisphere. In addition, physiological reactions to stressors involve such structures, named as, hypothalamus, pituitary gland, and adrenal glands.

Subject has no history of problems in the relationship, death of family member, friend, job loss, financial problems, problems of housing, school, legal problems, arrests, divorce, parenting problems, physical abuse, forced to have sex, victim of sexual abuse and / or being afraid of partner / member of your family. There is no recorded history of consumption of alcohol, tobacco, drugs, insomnia, pain, etc. There are no reports of suffering from any disability of any body part. Subject had no family history of any disorder, nor did her family have any symptoms. She has undergone some sessions of psychological or psychiatric treatment. Physical appearance of the Subject reveals starvation aspects, stained teeth, dry mouth, low blood pressure, pale face and generally signs of weakness and trembling tendencies. *Prima facie*, it is anticipated that the Subject might be undergoing some quantities of psychological disarray that might be harming her resilience to cope normally, and pilot to unsuitable and embroidered poignant response, complicatedness in perpetuation relations, unceasingly low frame of mind, and unconstructive substantial warning sign of say exhaustion.

The reason for consultation is that Subject had not eaten any type of solid food for two months (Case of anorexia nervosa). Subject maintained liquid-based diet; Subject choked when eating food, was afraid and refused contact of solid food in throat. The exaggerated reactions of Subject's fear of solid foods created tension in throat and tongue in terms of closure, delayed and very forced swallowing, and caused nausea and impaired salivation. Subject constant fear sabotaged possibility of at least imagining touch of these foods, and repeated negative visualizations in which Subject could not ingest anything because she would suffocate. Without having suffered any major illnesses of note, Subject had an intense fear and refusal to eat solid foods of any kind, sometimes in moments of high anxiety levels Subject would not even swallow her saliva. Team ruled out any physical problem through gastroscopy (check what's causing digestive symptoms; difficulties swallowing or pain when swallowing indigestion, heartburn or stomach pain), which was normal, and Subject was reluctant to attend psychological consultations.

Vital information reveals that there have been no complaints or presentation of Nervous system; viz. Headaches, Seizures, Dizziness, Paralysis, Mental Disorders, Cardiovascular; viz. Hypertension, Heart Attacks, Angina, Murmurs, Arrhythmias, Coronary Heart Disease, Hemo-Lymphatic System; viz. Anemia, Blood Disorders or Coagulation Problems. Digestive system; viz. Ulcer, Gastritis, Cirrhosis, Diverticula, Colitis, Hemorrhoids, Respiratory; viz. Asthma, Emphysema, Laryngeal or Bronchi Affection, Urinary; viz. Kidney Failure, Stones, Bloody Urine, Frequent Infections, Diseased Prostate, Sense Organs; viz. Cataracts, Terygium, Nearsightedness, Otitis, Deviated Septum, Sinusitis, Tonsillitis, Endocrine - Metabolic; viz. Diabetes, Thyroid Diseases, Alterations in Blood Fats or Uric Acids, Osteo-Articular; viz. Spine Diseases, Knee Pain, Deformities, Immunological; viz. Lupus, Rheumatoid Arthritis, Infectious; viz. Hepatitis, Tuberculosis, AIDS or HIV (+), Sexually Transmitted Diseases, Cancer, Tumors, Radiotherapy or Chemotherapy, Surgeries, Traumas, (Accidents), Gynecological; viz. Tumors or Masses in the Ovaries, Uterus, Abnormal Menstruation, Mammary glands; viz. Pains, Masses, Secretions, Pathological or Abnormal Vaginal Cytology, Allergic Reactions, and Skin Infections. Keeping all the considerations above it was decided by the Team to adopt the Subject for treatment with neuro-integral approach (unify functional organization data to better understand complex structures and behaviours) via. Adopted Neurosciences.

"NIS is based on the neurophysiological principle that the brain governs optimum function".

..... Dr. Allan Phillips

Session No. 1

The alarm reaction is essentially the emergency response of the body, which consists of the physiological changes that are the organism's first response to a stress – provoking agent or stressor. All organisms seem to complain of such symptoms as headache, fever, fatigue, arching muscles and joints, loss of appetite, and a general feeling of being "run down". In this stage, prompt responses of the body, any of them mediated by the sympathetic nervous system, prepares us to cope with the stressor here and now. Objective of this session was to evaluate the Subject's condition, interview and case analysis. Subject had been dealing with an extreme phobia of eating solid foods for the past two months, limiting her diet exclusively to liquids due to her fear of choking. The session began with a series of questions to understand the history and triggers of food phobia. Subject shared how it all started two months ago, when she choked on a piece of food, triggering an intense fear of eating solid food. As the interview progressed, Subject detailed how she had carefully avoided any solid foods since then and how this had affected her social and emotional life. Every mention of the idea of eating solid food caused unbearable anxiety. It delved into Subject's personal story, exploring her personal experiences, her emotional health, and her relationship with her body image. She also investigated possible past traumas related to food and how Subject perceived herself physically. After the initial interview, a preliminary analysis of the case was carried out, considering Subject's specific symptoms and their impact on her life. She noted her aversion to solid foods, fear of choking, and how this had limited her quality of life. She also considered possible triggers and Subject's personal experiences that could be contributing to her food phobia. Finally, the treatment approach was explained and how it was planned to address Subject's fears and concerns. Cognitive behavioral therapy was proposed to work on dysfunctional thoughts related to food and gradual exposure techniques to overcome fear of solid foods. The assessment session concluded with an initial treatment plan and a follow-up appointment was

scheduled. Although anxious, Subject expressed her desire to overcome her food phobia and regain a healthy relationship with food. Some of the activities planned and adopted were; Interview (history and triggers of food phobia), Impact (on social and emotional life), Personal History, Emotional Health and Body Image, Past Traumas related to food, Physical Self-Perception, Case Analysis (Specific Symptoms, Impact on Life, Triggering Factors, Personal Experiences, Treatment approach explained: Cognitive-behavioral therapy and Gradual exposure techniques).

Provisional Observations

1. Subject is eager to overcome her food phobia.
2. The initial treatment plan is appropriate for Subject's needs.

| Diagnosis | Signs and symptoms | Consequences |
|--|---|---|
| Generalized anxiety. Specific phobia. Other types (choking, vomiting). | Anxiety, sadness, panics attacks. Food avoidance behaviors. General emotional discomfort. Distorted thinking. | Excessive weight loss. Anxiety. Limited activities and lifestyle. |

Session No. 2

Objective of this session was oriented towards knowing the brain from neuroscience and exposure to VR to learn diaphragmatic breathing. The session began with an introduction to neuroscience, focusing on how the brain and body interact in situations of stress and anxiety. It was explained how diaphragmatic breathing can be an effective tool to calm the nervous system and reduce anxiety. Subject prepared for a VR experience, where she was immersed in a virtual environment that represented the nervous system and the brain. During this experience, Subject was able to graphically visualize how her nervous system responded to different breathing patterns. She directly experienced how diaphragmatic breathing had a calming effect on her body, reducing the activation of anxiety responses compared to shallow, rapid breathing. After the VR experience, Subject practiced diaphragmatic breathing in real life. Subject was guided through practical exercises to ensure Subject understood how to implement this technique in stressful situations. The session concluded with a conversation about how Subject could apply diaphragmatic breathing in her daily life to help manage anxiety related to her food phobia. Some of the activities planned and adopted were; introduction to neuroscience and anxiety: explanation of the interaction between the brain and the body in situations of stress and anxiety, engage in importance of diaphragmatic breathing in managing stress and anxiety, immersion in a virtual environment that represents the nervous system and the brain (VR Experience), experimentation with different breathing patterns and practical exercises to learn the application of diaphragmatic breathing in stressful situations (Diaphragmatic Breathing Practice).

Provisional Observations

1. Subject demonstrated receptivity during the VR experience.
2. The experience allowed Subject to directly experience the beneficial effects of diaphragmatic breathing.

Session No. 3

Objective of this session was to commence mindfulness and full attention training in food and environment. The session focused on gradually introducing Mindfulness and full attention practices related to food and the environment. The main goal was to help the Subject develop a healthier relationship with food and reduce the anxiety associated with food phobia. The session began by creating a serene and relaxed atmosphere. Scented candles and soft music were used to establish a cozy atmosphere. This was intended to make the Subject feel comfortable and safe during the session. Then, the concepts of Mindfulness and full attention were introduced. It was explained how these practices could help the Subject to be present in the current moment and reduce food-related anxiety. Emphasis was placed on the importance of mindfulness in eating and how this could lead to a healthier relationship with food. The practice began with a short Mindfulness meditation focused on breathing. This meditation was intended to calm the Subject's mind and prepare her for the next phase. Solid foods were then gradually introduced into the therapy session. The Subject was guided to carefully observe the foods present, paying attention to colors, textures, and smells without feeling the pressure of having to eat them. This approach allowed the Subject to explore their emotional and cognitive response to solid foods. Some of the activities planned and adopted were; introduction to the concepts of mindfulness and full attention, explanation of the concepts and their relationship with food, highlight the importance of full awareness in eating, detailed observation of food without the pressure to eat, presentation of solid foods and guide the Subject through a brief meditation to calm the mind.

Provisional Observations

1. The Subject showed receptivity and willingness to participate in Mindfulness and full attention practices.
2. Initial benefits of these practices were seen in reducing food-related anxiety.

Session No. 4

Objective of this session was to observe introduction to food, measuring their reactions with biofeedback plus neurofeedback and then reinforcement of mindfulness training with VR. In the treatment session, goal of gradually exposing Subject to solid foods was addressed using biofeedback and neurofeedback technology. This technology allowed the Subject to observe her physiological responses in real time while she faced her fear of solid foods. In the first part of the session, the operation of biofeedback and neurofeedback devices was explained, which included sensors to measure heart rate, sweating and other body responses. The Subject was introduced to a small portion of solid food while observing the readings on the devices to understand Subject physical and emotional reactions. Throughout this exposure, relaxation and mindfulness techniques were applied to help the Subject control her physiological responses. Subsequently, their mindfulness training was reinforced using Virtual Reality (VR). The Subject was immersed in a calm and natural virtual environment through a VR headset. Here, Subject was taught how to employ VR as a tool to practice mindfulness and confront her fears related to solid foods. During this virtual experience, the Subject interacted with virtual representations of solid foods and focused on Subject emotional and physiological responses, applying the control techniques Subject had previously learned. The session culminated with a discussion of the Subject's experiences during exposure and VR mindfulness practice. She was encouraged to apply these skills in her daily life to address her food phobia. The progress made in the session was highlighted and the importance of continuing the treatment process was stressed. Some of the activities planned and adopted were; gradual exposure to solid foods with biofeedback and neurofeedback: use of sensors to track physiological responses while the Subject interacted with solid foods, application of relaxation and mindfulness techniques: use of techniques to control physiological responses during exposure to solid foods and reinforcement of mindfulness training with VR: practice of mindfulness in a virtual environment interacting with virtual foods.

Provisional Observations

1. Subject was able to observe own physiological reactions in real time using biofeedback and neurofeedback technology.
2. She demonstrated skills to control physiological responses, applying relaxation and mindfulness techniques during exposure to solid foods.
3. Subject practiced mindfulness in virtual environment during Virtual Reality experience, focusing on emotional and physiological responses and applying control techniques.

Session No. 5

Objective of this session was to conduct cognitive training and progressive visualization. Focus was on cognitive training and progressive visualization as part of the therapeutic approach to the Subject's food phobia. This session aimed to help Subject change her negative thought patterns and face her fears related to solid foods in a controlled and safe way. The session began with cognitive training, where Subject was guided to identify the negative thought patterns that had been contributing to her food phobia. We worked to question and challenge these dysfunctional thoughts, with the purpose of cultivating a more positive and realistic mentality in relation to food. Later, we delve into progressive visualization. Subject was led through deep relaxation and encouraged to imagine a safe scenario in which she was surrounded by solid foods, including her favorite foods and favorite sweets. During this visualization, Subject experienced gradual exposure to solid foods, touching them, smelling them, and finally tasting them in small portions. Throughout this process, it was emphasized that Subject was able to remain calm and in control of her emotions. The session concluded with a conversation to explore Subject's experiences and sensations during cognitive training and progressive visualization. Subject was reminded that this recovery process would take time and effort, but each small step forward would bring her closer to her goal of overcoming her food phobia. This session was an important step on Subject's road to recovery, as it gave her tools to change her relationship with food and face her fears more effectively. Some of the activities planned and adopted were; Cognitive Training (During this part of the session, we worked on identifying and challenging the negative thought patterns that had been contributing to Subject's food phobia. Together, Team explored how changing those dysfunctional thoughts and cultivating a more positive, realistic mindset could be critical to her recovery), Progressive Viewing (After addressing the cognitive aspects, we proceeded with progressive viewing. Subject was guided through deep relaxation and encouraged to imagine a scenario in which she was surrounded by solid foods, including her favorite foods and favorite sweets. During this visualization, Subject faced her fears in a controlled and safe manner, touching, smelling, and tasting small portions of solid foods. Subject was encouraged to connect with the positive sensations that arose during this experience and to recognize how her mind and body might respond differently to solid food than she had experienced in the past).

Provisional Observations

1. In this session, it was observed that Subject was able to identify and challenge her negative thought patterns, indicating a willingness to change her mindset towards eating. Furthermore, during progressive visualization, Subject experienced positive sensations and managed to maintain calm and emotional control, suggesting progress in her ability to face her food fears more effectively.
2. Subject was committed to the recovery process and recognized that, although it will take time and effort, each small progress brings her one step closer to her goal of overcoming food phobia.

Session No. 6

Objective of this session was to introduce Reiki session and diaphragmatic breathing reinforcement. In this session, two key therapeutic approaches were combined: Reiki and diaphragmatic breathing reinforcement, with the aim of reducing Subject's anxiety and strengthening her ability to cope with her food phobia. The session began with an explanation of how Reiki and diaphragmatic breathing can help reduce anxiety and promote calm. The Subject, receptive to these techniques, expressed her desire to try them. Some of the activities planned and adopted were; Reiki Session (Subject lay down on the stretcher in a quiet environment, Hands were gently applied to different areas of the Subject's body to channel healing energy and relieve accumulated tension and reduce the Subject's anxiety). Another activity was Reinforcement of Diaphragmatic Breathing (importance of diaphragmatic breathing as an effective tool for anxiety control was emphasized, Subject practiced diaphragmatic breathing throughout the session to maintain a constant state of calm and significant challenge arose when Subject decided to eat a small piece of chocolate, a solid food she had avoided due to her phobia. The Subject applied diaphragmatic breathing to address this challenge).

Provisional Observations

1. Subject managed to overcome her fear of eating solid food on her own during the session.
2. Subject expressed satisfaction and gratitude for the progress achieved.
3. Importance of continuing to work on overcoming food phobia and strengthening connection with inner calm as part of recovery process was highlighted.

Session No. 7

Objective of this session was to conduct VR session and contemplative exercises. In this session, two key therapeutic approaches were combined: Virtual Reality (VR) and contemplative exercises, with the aim of helping the Subject overcome her phobia of solid foods in a gradual and controlled manner. The session began with an explanation of how VR and contemplative exercises can help overcome the phobia. Subject, receptive to these techniques, expressed her desire to try them. Some of the activities planned and adopted were; VR Session (Subject put on a VR headset and was immersed in a virtual environment designed to gradually confront her fears. Subject explored a virtual environment where she could see and touch solid foods safely and without pressure to eat them. Team guided Subject through contemplative exercises while interacting with food in VR). Contemplative Exercises (Subject practiced mindfulness while observing the virtual foods, paying attention to their details such as colors, textures, and shapes. The importance of conscious breathing to maintain presence in the moment was emphasized. Subject had the opportunity to touch and explore small portions of solid foods in the virtual environment. As the session progressed, Subject noticed changes in her emotional and physical reactions to solid foods).

Provisional Observations

- Subject was able to interact with solid foods in the virtual environment without experiencing anxiety.
- Subject expressed a sense of control and change in her perception of solid foods as a result of the session.

Session No.8

Objective of this session was to conduct laughter yoga session and EMDR training. This session combined two therapeutic approaches: laughter yoga and EMDR training, with the goal of helping the Subject release repressed emotions and process fears related to solid foods. Some of the activities planned and adopted were; Laughter Yoga Session (session began with a laughter yoga practice, designed to relieve tension and release repressed emotions. The Subject participated in contagious laughter exercises that provided physical and emotional benefits). EMDR Training (After the laughter yoga session, EMDR training was introduced). Subject sat comfortably while I guided her through eye movements and a series of sensory stimuli. These helped Subject explore her fears and concerns related to solid foods and process the associated emotions and traumatic memories.

Provisional Observations

- Subject was able to connect her emotions and thoughts with her past experiences during the EMDR session.
- Subject shared an exciting achievement of having started incorporating pasta and mashed potatoes into her diet with less anxiety than before.
- This marked an important step in her recovery process.

Session No.9

Objective of this session was to introduce Reinforcement of diaphragmatic breathing and progressive visualization. In this session, emphasis was placed on reinforcing diaphragmatic breathing and progressive visualization to help Subject overcome her phobia of solid foods. The significant progress Subject had made so far was highlighted, having begun to incorporate foods into her daily diet

when she felt confident. Some of the activities planned and adopted were; Progress Review (Reviewed Subject's notable progress to date, emphasizing her determination and progress. It was noted that she was now eating food twice a day when she was feeling confident), Reinforcement in Diaphragmatic Breathing (reinforcement session in diaphragmatic breathing was carried out. Biofeedback sensors were used to track her physiological responses during practice, which would allow Subject to be aware of her progress in regulating her physiological responses) and Progressive Visualization with Neurofeedback (Subject closed eyes and immersed herself in a progressive visualization. She imagined a scenario with solid foods and neurofeedback was used to keep her in calm and focused state of mind. During this visualization, she was encouraged to connect with positive sensations and remember how her mind and body might respond differently to solid food).

Provisional Observations

1. Subject managed to remain calm and in control of her emotions during the visualization.
2. She expressed gratitude and joy for her progress, including incorporating food into her daily diet when she felt confident.

Session No.10

Objective of this session was to finish sessions with reinforcement of cognitive activities and complementary techniques. This session marked the closure of Subject's treatment. It began with a review of the notable progress she had made throughout her therapeutic process. It is important to highlight her determination and commitment to the treatment, highlighting how she had faced her fears and worked tirelessly to overcome the food phobia that had previously affected her. Some of the activities planned and adopted were; Review of Subject's Progress (Subject's determination and commitment to the therapeutic process stood out. The notable progress she had made throughout the treatment was highlighted) and Reflection on Challenges Overcome and Tools Learned (Team reflected on the challenges that Subject had overcome during her recovery process. It was discussed how she had applied the tools learned in her daily life, especially in the transition to solid foods).

Provisional Observations

1. Subject expressed gratitude and joy for the progress made throughout the treatment.
2. Subject had regained a healthy relationship with food and overcome her food phobia, allowing her to enjoy solid foods without anxiety.

Deliberations on Treatment

1. In Subject's therapy sessions, Team have witnessed a remarkable transformation in her life. Starting with an extreme phobia of solid foods that severely limited her diet and quality of life, Subject has made steady and determined progress towards recovery.
2. Throughout treatment, Team have witnessed her significant achievements and progress. Subject has learned to control her anxiety by practicing diaphragmatic breathing techniques and visualization exercises. The incorporation of technologies such as biofeedback and neurofeedback has been essential for Subject to understand and regulate her physiological and emotional responses to solid foods.
3. Additionally, Subject has demonstrated an unwavering commitment to her therapeutic process, which has been essential to her recovery. Subject has overcome challenges, challenged negative thought patterns, and worked on cultivating a more positive and realistic mindset.
4. At the close of the sessions, Subject shared her joy by reporting that she can now enjoy solid foods without the crippling anxiety she used to experience. She has regained a healthy relationship with food and has found the freedom to explore a variety of foods that previously caused her fear.

The treatment results reflect significant progress in Subject's overall health. Specifically, Subject has experienced notable improvements in the following areas:

- **Overcoming Food Phobia:** Subject managed to overcome her extreme phobia of solid foods. Subject used to limit her diet to liquids only, but now she can enjoy a variety of foods without the crippling anxiety she used to experience.
- **Anxiety Control:** Through techniques such as diaphragmatic breathing, progressive visualization, and the use of biofeedback and neurofeedback technologies, Subject has learned to control her anxiety effectively, allowing her to face her fears with confidence.

- **Developing A Positive Mindset:** Subject worked on challenging and changing her negative thinking patterns. She has cultivated a more positive and realistic mindset, which has contributed to her success in treatment.
Success – Oriented Factors
- **Subject's Commitment:** Subject's determination and unwavering commitment to the therapeutic process were critical to her success. She was willing to face her fears and work tirelessly to overcome her phobia.
- **Therapeutic Support:** Received constant and effective support throughout treatment. A variety of techniques and technologies were used to address the cognitive and emotional aspects of food phobia.
- **Use of Advanced Technologies:** The incorporation of technologies such as biofeedback and neurofeedback allowed Subject to understand and regulate her physiological and emotional responses. These tools were essential for her recovery.

Recommendations

1. As Subject continues her path to recovery, it is important that she continues to apply the tools and techniques she has learned in therapy in her daily life. This includes maintaining practices like diaphragmatic breathing and progressive visualization to keep her calm and confident in challenging food-related situations.
2. Additionally, Subject may consider continuing to work on building a positive and realistic mindset, as this will be beneficial in all areas of her life.

II. CONCLUSIONS

Mindfulness helps one to connect positively with the world outside. Mindfulness connects the conscious inner self with the universality or the ultimate existence of life on the planet or maybe with the entire spectrum of life in the universe. The mind continues to be connected to the universal truth mired by the pleasures and pains of life. The discussion between whether one should remain within the actual state of physical reality or transcend to the higher unconscious levels will always remain alive. Identifying and examining factors that contribute to an individual's sense of well-being is one major goal of psychosocial and quality of life research. Keeping in tune with the positive psychology movement, which tries to understand and enhance positive and adaptive aspects of the human experience rather than focusing only on symptoms, deficits, and limitations (Seligman and Csikszentmihalyi, 2000), researchers in healthcare and rehabilitation have begun focusing on subjective well-being, including ideas such as life satisfaction, as the preferred outcome in persons with disabilities (Chou et al., 2013). The identification of factors that could influence well-being and life satisfaction, and consequently may be targeted for intervention, is of primary importance (Chou et al., 2013; Hampton, 2004; Kobau et al., 2010; Vestling et al., 2005).

Emotions and stresses are the spices of life; they are just like the salt in curry; without this life is not a life. There is no life without stress; and no stress without life. Some amount of stress is essential for life because the achievements of an individual are possible, in part, due to stress. Therefore, an optimal amount of stress in one's life is a blessing in disguise; though a chronic stress is harmful. Almost any change in the environment or life demands some coping. Though the susceptibility to stress effects varies greatly from person to person, there are some events which seem to be stressors for many of us. Chief among these are injuries or infections of the body, annoying or dangerous events in the environment, major changes or transitions in life, which force us to cope in new ways.

Recent research on psychological well-being has identified the psychosocial dynamics of human contentment. The advancement in the area of positive psychology has greatly facilitated this research. Drawing on these contemporary developments, it is asserted that engagement-seeking and contentment need not be viewed as separated, often incompatible (Devoutness) processes. The positive psychological concepts such self-efficacy, optimism, resilience, emotional intelligence and growth mind-set are well-incorporated in contentment. These positive attributes are needed for successful engagement seeking emotional behaviour. The self-efficacy offers the confidence of executing a function competently. Optimism provides the supportive cognitive style to pursue both the engagement and contentment. Resilience builds capacity to deal with adversity. Emotional intelligence furnishes the human factors of empathy and compassion. The growth mind-set leverages the abundance of energy. An integrative approach to blend engagement seeking with contentment fulfills the objective of innovation and flourishing.

REFERENCES

1. Admin, SJRP. "Neurointegration Therapy". SJRP Drug & Alcohol Rehab Florida. Retrieved 2021-03-03.
2. Dalton, Bethan; Campbell, Iain C.; Schmidt, Ulrike (November 2017). "Neuromodulation And Neurofeedback Treatments In Eating Disorders And Obesity". *Current Opinion In Psychiatry*. 30 (6): 458–473.
3. Dehghani-Arani, Fateme; Rostami, Reza; Nadali, Hosein (June 2013). "Neurofeedback Training For Opiate Addiction: Improvement Of Mental Health And Craving". *Applied Psychophysiology And Biofeedback*. 38 (2): 133–141.

4. Orndorff-Plunkett, Franklin; Singh, Fiza; Aragón, Oriana R.; Pineda, Jaime A. (2017-08-07). "Assessing The Effectiveness Of Neurofeedback Training In The Context Of Clinical And Social Neuroscience". *Brain Sciences*. 7 (8): 95.
5. Percik, Ruth; Cina, Jenny; Even, Batel; Gitler, Asaf; Geva, Diklah; Seluk, Lior; Livny, Abigail (2019-02-01). "A Pilot Study Of A Novel Therapeutic Approach To Obesity: CNS Modification By N.I.R. H.E.G. Neurofeedback". *Clinical Nutrition*. 38 (1): 258–263.
6. Scott, W. C.; Kaiser, D.; Othmer, S.; Sideroff, Stephen I. (2005). "Effects Of An EEG Biofeedback Protocol On A Mixed Substance Abusing Population". *The American Journal Of Drug And Alcohol Abuse*. 31 (3): 455–469.
7. Siegel, Daniel J. (December 2007). "Mindfulness Training And Neural Integration: Differentiation Of Distinct Streams Of Awareness And The Cultivation Of Well-Being". *Social Cognitive And Affective Neuroscience*. 2 (4): 259–263.
8. Thomas, Alex W; Graham, Karissa; Prato, Frank S; Mckay, Julia; Forster, Patricia Morley; Moulin, Dwight E; Chari, Sesh (2007). "A Randomized, Double-Blind, Placebo-Controlled Clinical Trial Using A Low-Frequency Magnetic Field In The Treatment Of Musculoskeletal Chronic Pain". *Pain Research & Management*. 12 (4): 249–258.
9. Billings, A. G., & Moos, R. H. Coping, Stress, And Social Resources Among Adults With Unipolar Depression. (1984). *Journal Of Personality And Social Psychology*, 46(4), 877-91.
10. Iyengar, S. S., Wells, R. E., & Schwartz, B. (2006). Doing Better But Feeling Worse: Looking For The "Best" Job Undermines Satisfaction. *Psychological Science*, 17(2), 143-150.
11. Pennebaker, J. W. (1997). Writing About Emotional Experiences As Therapeutic Process. *Psychological Science*, 8, 162-166.
12. Ramirez, J. C., Satpathy, J., Adriana, I.A.S. (2023). Adaptive Neurosciences – Based Neurofeedback And Biofeedback Clinical Studies [Case Study - 3], *International Journal Of Innovative Research In Science, Engineering And Technology (IJIRSET)*, ISSN: E-ISSN: 2319-8753, P-ISSN: 2347-6710, Volume 12, Issue 10, October 2023, , Pp: 12897- 12911, India (International).
13. Ramirez, J. C., Satpathy, J., Adriana, I.A.S. (2023). Neurointegral Methodology In Adaptive Neurosciences (Case Study - 2), *International Journal Of Advances In Engineering And Management (IJAEM)*, 918 ISSN: 2395-5252, Volume: 5, Issue: 9, Sep 2023, Pp: 876-918, India (International).
14. Ramirez, J. C., Satpathy, J., Adriana, I.A.S. (2023). Neurointegral Methodology Based Adaptive Neurosciences In Mental Well - Being: Case Study - 1, *International Journal Of Research In Engineering And Science (IJRES)*, ISSN (Online): 2320-9364, ISSN (Print): 2320-9356, Vol. 11, Issue. 10, October 2023, Pp. 127-142, India (International).
15. Rapp, Paul E.; Keyser, David O.; Albano, Alfonso; Hernandez, Rene; Gibson, Douglas B.; Zambon, Robert A.; Hairston, W. David; Hughes, John D.; Krystal, Andrew; Nichols, Andrew S. (2015-02-04). "Traumatic Brain Injury Detection Using Electrophysiological Methods". *Frontiers In Human Neuroscience*. 9: 11.
16. Satpathy, J. And Aithal, P.S. (2023). Cognito - Ocular Indices Based Neurointegral Decisions, Proceedings Of The MANEGMA National Conference (21st Series: 2023) On Recent Trends In Management, Social Science & Technology, 30 Sep 2023, Institute Of Management & Commerce, Srinivas University, Mangaluru, India (National).
17. Watkins, P. C., Grimm, D. L. & Kolts, R. (2004). Counting Your Blessings: Positive Memories Among Grateful Persons. *Current Psychology*, 23(1), 52-67.



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