Journal of Arts and Social Sciences
https://ojs.jass.pk

Functional Neurological Symptom Disorder (FNSD) Assessment and Treatment: A Clinical Case Study

Amber Roohee*

**MS Scholar, Clinical Psychology Riphah International University, Lahore.amber.roohee@gmail.com*

ARTICLE INFO

Article history:
Submitted 10.05.2024
Accepted 20.10.2024
Published 31.12.2024

Volume No. 11
Issue No. II
ISSN (Online) 2414-8512
ISSN (Print) 2311-293X
DOI:

Keywords: Functional Neurological Symptom Disorder, Seizures, Cognitive Behavior Therapy

ABSTRACT

The patient was 30 years old, Christian, married housewife with 4 kids, and educated up till 8th class. She visited to Psychiatry Department of Lahore General Hospital, Lahore with presenting complaints of headaches, dizziness, fits of unconsciousness, jerky movements during fits, muscular tension, low mood, anger, and talk like a child, body aches and disturbed sleep. She was referred to the trainee clinical psychologist for psychological assessment and management of her symptoms. Informal assessment was done by using clinical interview, mental status examination and baseline charts of symptoms. Formal assessment was done by using Beck Depression Inventory (Beck, 1961), DSM-5 TR symptom checklist of Functional Neurological Symptoms Disorder, Slossan Drawing Coordination Test (Slosson, 1967) and Rotter Incomplete Sentence Blank (Rotter, 1950). After careful formal and informal assessment the patient's current diagnosis was (Functional Neurological Symptoms Disorder) Conversion Disorder (F44.7) mixed symptoms with stressors and in acute phase. Her case was conceptualized by Looper and Kermayer (2002) model. The CBT and psychodynamic techniques used to treat like psycho-education, fit record chart, deep breathing, progressive muscle relaxation, extinction, differential reinforcement, daily and thought record, identifying cognitive errors, cost-benefit analysis, anger management, problem solving and free association. Post assessment analysis showed that the patient had shown 70% improvement in her symptoms after 12 psychotherapeutic sessions.

Introduction

Functional Neurological Symptom Disorder (FNSD) is an ambiguous neurological syndrome wherein patients display physiological symptoms that have no biological origin. The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (DSM-5-TR) by the American Psychiatric Association (2022) classified FNSD within somatic and related disorders, defining its diagnostic criteria as changes in motor or sensory processes that involve paralysis, tremor, dystonia, myoclonus, abnormal gait, dysphonia, slurred speech, lumps in the throat (globus), visual, hearing, or olfactory disruptions, and seizures with or without stressors lingering for 6 months or longer. These symptoms can be culturally influenced and hinder daily life functioning. Sigmund Freud identified these signs as hysteria which is basically a defense mechanism use a person in order to overcome his/her severe life stressors (Freud, 1962).Freud used the term conversion for the first time for repressed needs and intrapsychic conflicts. (Freud, 1962). These conflicts are basically the needs of sexuality, aggression, or dependency against their expression (Kaplan, Sadock, Baltimore, Williams & Wilkins, 1995). In FNSD these unconscious needs manifest in the form of symbolic presentation.The learning theory also explained the etiology of conversion disorder as the patient's belief to get the external benefits (secondary gains)

Correspondence concerning this article should be addressed to Amber Roohee, amber.roohee@gmail.com

associated with assumption of the sick role (Kozlowska, 2017). According to cognitive theorists, an individual feels mental illness as a result of misinterpretation of events or due to negative automatic thinking or distortions in thinking pattern (Comer, 2013)The hopelessness theory of depression posits that when confronted with a negative event, people who exhibit a depressogenic inferential (thinking) style, are vulnerable to developing depression because they will infer that negative consequences will follow from the current negative event. .FNSD is the second most frequent diagnosis in hospitals (Fobian & Elliott, 2018). Its prevalence is double in women than male (Sperry, 2015).

Many researchers have discovered that FNSD often develops after emotional and physical traumas and has a notable occurrence among women, particularly those from lower socioeconomic status or those living in restrictive environments (Espay et al., 2018; Morris et al., 2018). Several indigenous studies have shown that married women within Pakistan indicate greater vulnerability to FNSD due to the stress that comes from meeting cultural norms like family obligations and confined freedom in making their own choices (Ijaz et al., 2017; Ahmed & Bokharey, 2013). A study highlighted the impact of cultural factors on the prevalence and manifestation of FNSD among women in South Asian countries, where stigma is attached to mental illness, so psychological problems manifest into physical symptoms (Roohee & Sunbal, 2023).A significant obstacle to diagnosing and managing FNSD is due to the scarcity of mental health facilities and inadequate understanding of mental health in Pakistani women.

Cognitive behavioral therapy (CBT) has been accepted as a leading psychotherapeutic approach for managing FNSD.Vroege, (2020) showed that CBT can notably diminish the magnitude and frequency of symptoms by treating the underlying psychological triggers and educating patients to manage their anxiety and stress.Psychodynamic approach stressed on traumas,secondary gains,free association,transference and counter transference.The mental health professionals should recognize and reflect on the patient's cultural context, including gender dynamics, family structure, and societal demands for adapting the therapy.

Theoretical Framework

Looper & Kirmayer's (2002) theoretical framework for Functional Neurological Symptom Disorder (FNSD) explained that it develops from the combination of psychological, emotional, and neurobiological mechanisms. Their model claims that psychological factors such as trauma or unaddressed emotional distress can appear physically due to disruption in the brain's sensory and motor processes, which cause the onset of symptoms like paralysis, seizures, or sensory loss.Attention to bodily sensations and its interpretation play important role.

The Study Objective

This study evaluated the assessment and treatment of a married Pakistani woman suffering with FNSD by using CBT and a brief psycho-dynamic approach.

Research Hypotheses

Cognitive behavior therapy and brief psychodynamic largely decreases the symptomotology of patient i.e. headches,dizziness,shortness of breath,functional myonocus, seizures, anger, anxiety,sad mood, irritability, low appetite, and decrease sleep.

Methodology

Research Design

ABA, a single-case research design was used for assessing and treatment of FNSD.

Sample

The patient 30 years old christian lady visited the outpatient department (OPD) of Lahore General Hospital, Lahore with the complaints of headaches, dizziness, shortness of breath, fits of unconsciousness, body jerks during fits, irritability, hopelessness, restlessness and disturbed sleep. For further assessment and management, she was referred to the trainee clinical psychologist.

Background Information

According to patient, her symptoms started first time after the death of her father-in -law about 5 months back. Suddenly, she felt shortness of breath, trembling, heart pounding, and later became unconscious. They rushed to the hospital and admitted there for three days and doctors reported that her CT scan and ECG were normal. There was no medical reason for her problem so she was discharged from the hospital. After that, she started to have fits almost every day for about 10 minute's duration. Her problem had started again about 2 ½ months ago after a fight with her 12 years old son who hit on her head with a shoe. After that incident, when she was busy in the kitchen. She felt headache, dizziness and later became unconscious. They rushed to the hospital again and she was admitted in the psychiatry ward where all her physical examinations and MfRI were normal. During fits she experienced symptoms like jerky movements in body. When she became unconscious then always fell down on floor with a safe posture. There was no history of head injury, tongue bite, froth from mouth or urinary incontinence during those episodes of

Correspondence concerning this article should be addressed to Amber Roohee, amber.roohee@gmail.com

unconsciousness. She came into consciousness by her husband and children's efforts that used to sprinkle water on her face or massage her palms and close her nose. Patient was aware of voices around her during that spell but unable to talk. Those fits always occurred in the presence of other but not during sleep. She used to have those fits 2-3 times in a week. She remained unconscious for about 10-20 minutes. They visited different physician and faith healers because they thought she was possessed by a spirit.

According to the family history, her father was 65years old and working as a painter.He was humble and had satisfactory relationship with patient.He had asthma and was under medication.Her mother was 58 years old woman and working in a salon. The patient reported that her mother was an authoritative kind of person but she took care of her.The patient had unsatisfactory relationship with her 2nd born brother who was 28 years old married man as she reported that her brother used to fight with her. There was sibling rivalry between them when they were child. She still remembered a fight with him long time ago, when he hit her with a glass.The patient was very close to her 3rd born sister who was 26 years old married lady.The patient idealized her 4th number 18 years old sister who was working in a salon with her mother. Patient wanted to be like her and start a job to become independent to earn money so she could not ask money from others.She had satisfactory relationships with he 16 years old last born brother.She got married 13 years ago with her first cousin and it was an arranged marriage.Her sexual relationship with her husband was satisfactory .The relationship between patient and her husband was conflicted as they used to fight with each other on minor issues. She had a complaint about doing household chores alone. She wanted to work outside home to earn money because his husband did not earn enough but her husband insisted her to stay home and do not go out. According to patient her husband used to beat her after drinking alcohol.He also stopped her to going to church and visited her parents' home.

According to the personal history of patient reported by her mother, there was no previous family history of psychological illness. The general home atmosphere was unsatisfactory as patient belongs to a low socioeconomic class.There was no prenatal, postnatal and neonatal history of patient's complications. She was born with normal delivery. She achieved her developmental milestones at an appropriate age. No neurotic traits were reported during her childhood. She had few friends and played with them. She was sociable and her relationships with other people were satisfactory. The patient reported that she liked her childhood because that was a care free time and she wanted to become child again.She started schooling at the age of 5 years. She was an average student. She had good relationships with her teachers and peers. She was an average student and studied up to 8th class, but after that she discontinued her studies because her mother started working outside home so she was responsible for all domestic work and to look after her siblings at home.Her menstrual cycle started at the age of 13 years. She was well briefed by her mother so she did not face any problem related to menarche. She felt changes in herself after puberty but she was not surprised because she already had knowledge about those changes.Her premorbid personality showed that the patient was a extrovert person and fond of shopping. She was sensitive,over emotional and had low frustration tolerance. She was religious person and used to go to church on every Sunday and do her religious practices regularly.

Assessment Tools (Informal Assessment)

Clinical Interview

A detailed interview was conducted with the patient and her informant (mother and husband) with consent and she was assured about the confidentiality. The patient was compliant and gave detailed information to the trainee clinical psychologist.

Mental Status Examination *(MMSE; Folstein et al., 1975)*

Her dress was appropriate according to weather. Her facial expression and body posture showed anxious.She made an eye contact but not maintained. Her mood was low subjectively and objectively.She was also crying during interview. Her rate of speech was low. No formal thought disorder and perceptual disorder was elicited. Her orientation was intact with respect to time, place and person. Her thought pattern was coherent and logical but had depressed thoughts such as hopelessness and helplessness. The patient did not report any suicidal ideation and suicidal attempt. Her abstract reasoning and judgment was intact while her attention and concentration was of short span. Her remote, past and recent memory was intact. Insight was present in the patient about her illness.

Baseline Charts the symptoms

The patient was asked to rate her presenting problems on 0-10 point rating scale in which "0" means absence of symptoms, "5" means moderate severity of symptoms and "10" means extreme severity of symptoms.

Correspondence concerning this article should be addressed to Amber Roohee, amber.roohee@gmail.com

Table: 1

Table showing the symptoms and their ratings by the patient on the 10 point rating scale.

Symptoms	Ratings by the patient (0-10)
Fits of unconsciousness	10
Dizziness	9
Shortness of breath	8
Jerks in body	9
Headache	9
Anger issues	7
Low mood	10
Irritability	10
Hopelessness	9
Poor sleep	9

Note: 0 =No Problem; 5 = Average Problem; 10 = Severe Problem

Daily Thought Record

The daily thought record is a self-record protocol for recording a range of triggers and related emotions and thoughts of the patient.

Quantitative analysis

Table 2

Showing misinterpretation of symptoms and intensity of emotional distress

Areas of DTR	Pre-treatment rating
Average belief on catastrophic misinterpretation	9 (on 0-10 point scale)
Average distress due to misinterpretation	9%

Note: 0 =No Problem; 5 = Average Problem; 10 = Severe Problem

Table 3

Table showing qualitative analysis of DTR.

Areas of DTR	Functional Analysis	
Antecedents	i)	Conflict with in-laws
	ii)	No one talk
	iii)	Headache and husband did not care
	iv)	When son behaved badly
Automatic Thoughts/cognitions	i)	Mother-in-law always taunt me and husband did not support me
	ii)	Kids are not with me
	iii)	In-laws taking advantage of her
	iv)	Husband did not care her
Feelings	i)	Irritability
	ii)	Sadness & hopelessness
	iii)	Anxious
	iv)	Anger
Behaviors	i)	Tearful, not talk to others

Formal Assessment

Table 4

Quantitative analysis MMSE:

Maximum score	patient's score	Remarks
30	**26**	**No cognitive impairment**

Correspondence concerning this article should be addressed to Amber Roohee, amber.roohee@gmail.com

Qualitative Analysis of MMSE

According to score on MMSE patient had no cognitive impairment.

Slossan Drawing Test (Slossan,1967)

*It is a brain dysfunctional psychological test, there was no neurological deficits present for the symptoms in patient. Test were taken for 3 times.Total 12 items and cutoff score is 85%.Her raw score w*as 45% .

Beck Depression Inventory (Beck,1961)

Table 5

Showing raw score, cut off and category.

Raw Score	Cut off	Category
25	20-28	Moderate depression

Rotter Incomplete Sentence Blank (Rotter & Rafferty,1950)

Table 6

Quantitative Interpretation of RISB

Responses Type	C3=7	C2=6	C1=4	N=3	P1=2	P2=1	P3=0
No of Items	11	3	4	3	5	8	5
Obtained Score	77	18	16	9	10	8	0

Qualitative Interpretation

The total score of 138 is above the cutoff score of RISB which is 135, which meant she was somehow maladjusted in her environment. Her attitude towards home and family was negative, patient was close to her sister and spoke well of her siblings. However, she showed a conflicting view regarding marriage that she does not want to get married. Her general attitude toward life was pessimistic and she thought that because of her negative thoughts she was not well and she feared that she would never be healthy again. She felt insecure and there was the fear of loneliness. Her sense of approval from others was also not satisfactory and it showed that she wanted people to accept her. Patient had an insight that it was because of her negative thoughts and over thinking she was in such condition.

Diagnosis

According to DSM-5 TR (2022) Functional Neurological Symptom Disorder (F44.7) mixed symptoms with stressors with acute phase.

Prognosis

The prognosis of the patient was good because of insight of her problem, motivation and compliance for recovery.

Case Formulation

It was evident from patient's history that she was disturbed due to disputes between her husband and in-laws regarding financial issues and relationship conflicts which were ***precipitating factors (triggers).*** As patient was unable to express her needs as she was not wanted to be dependent on her in-laws financially anymore because they taunt her afterward. She was also against that her elder son became under the influence of her mother in law but she was not brave enough to express it.Whenever she had a fit then everybody at home gathered around her and started looking after her which were perpetuating ***(maintaining) factors.***

It was evident from patient's history that she had negative thoughts about the life events like catastrophizing and fortune telling etc.

She was elder in the siblings and mother was working outside home so she had a pressure to look after her siblings and responsible for all the domestic chores alone. Patient wanted to continue her studies but parents did not allow her. Whenever she refused then she faced worse consequences which were ***predisposing factors***.

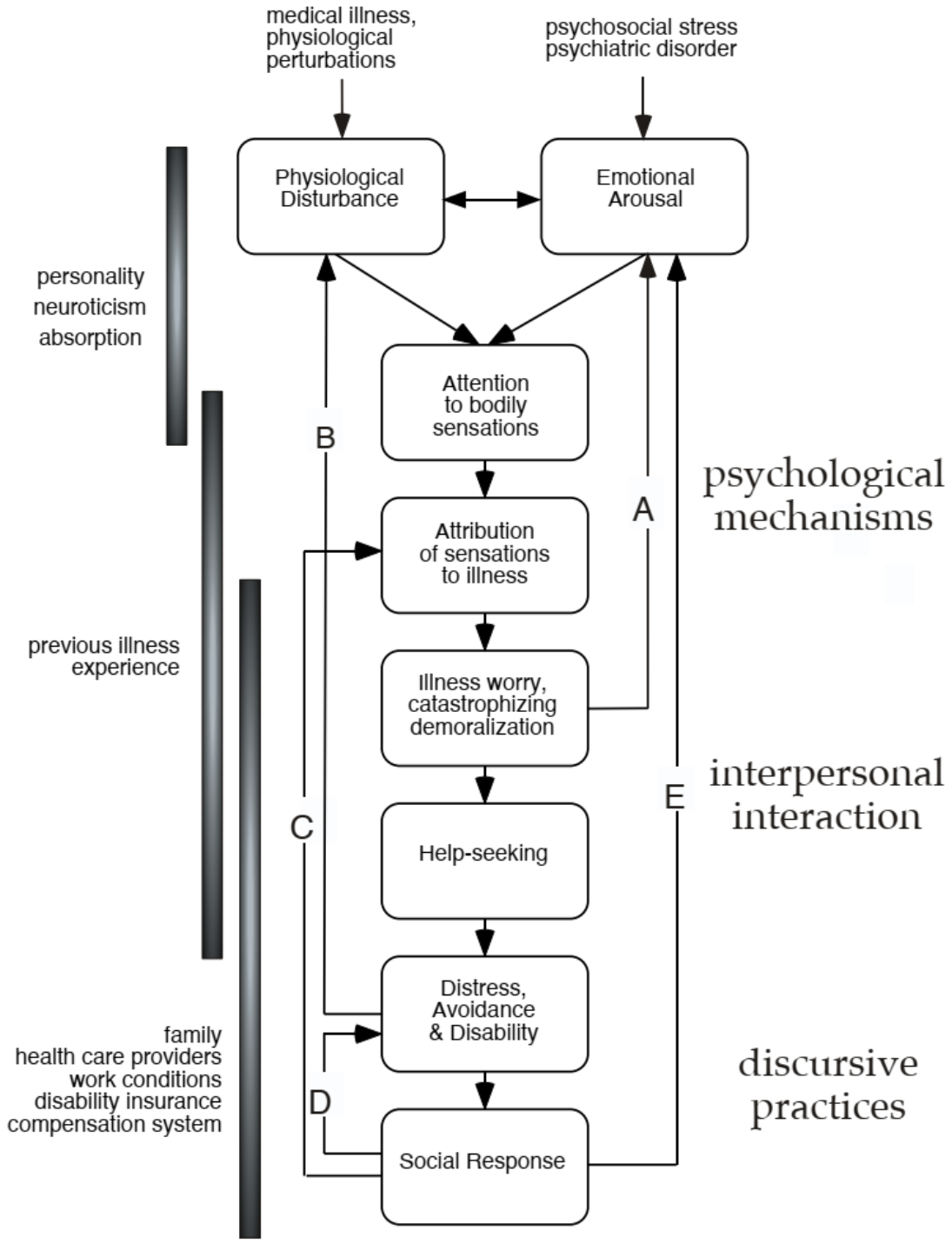
Case Conceptualization

Once a somatic symptom develops, two cognitive variables appear: attention to body sensation and interpretation of these symptoms (Looper & Kirmayer; 2002).

Correspondence concerning this article should be addressed to Amber Roohee, amber.roohee@gmail.com

Figure 1

Idiosyncratic Case Conceptualization for Functional Neurological Symptom Disorder (Looper & Kirmayer, 2002)



Management Plan

The management plan was devised on the basis of Cognitive Behavioral Therapy.

Short-term goals

- ***The rapport*** will be built to the patient to engage her in the therapy by empathy, warmth and positive regard etc.
- ***The reassurance*** will be given to the patient to encourage and developed a hope to overcome her problem and ensure that her problem was understood by the therapist.

Correspondence concerning this article should be addressed to Amber Roohee, amber.roohee@gmail.com

- ***The psycho-education*** will be given to the patient and her family to understand the nature of her problem.
- ***Exploring past traumas*** by bringing repressed emotions to conscious awareness.
- ***Addressing Primary and Secondary gains*** by discussing attention and avoidance of responsibilities.
- ***Free association*** helps patient to express herself freely to gain insight.
- ***The extinction*** guideline was explained to the family so that patient's problematic behavior will not be reinforced by planned ignorance and differential reinforcement.
- ***The family counseling*** was provided to the patient's family to overcome her practical and relationship problems.
- ***The deep breathing*** will be taught to the patient by modeling to calm her body from stress.
- ***The progressive muscle relaxation*** will be taught to the patient by modeling to reduce her body muscle tension and body aches.
- ***The ABC model*** of CBT will be explained to the patient so that she could understand the relation among thoughts feeling and behaviors.
- ***Socialization*** of the case conceptualization will be explained to the patient so that she could get an insight regarding the predisposing, precipitating and perpetuating factors of her problematic behavior.
- ***The coping statements*** were given to the patient to practice them to make herself calm so she could handle difficult time effectively.
- ***Cognitive therapy*** will be used to identify her cognitive distortions and challenged them by ***triple column technique*** to find out its evidence and alternative thought.
- ***The anger management*** was delivered to the patient to overcome her anger by distraction, cost benefit analysis and anger letter.
- ***The sleep hygiene*** was explained to the patient by sleep inducing techniques.
- The patient will be explained to make ***a list of asserts and blessing*** **t**o overcome her hopelessness.
- ***Behavior therapy technique activity schedule*** and ***master and pleasure*** principle will be used to break the lethargy cycle and increase her performance in daily activities.

Long-term Goals:

- Continuation of the short term goals will be done in order to maintain the positive change.
- Follow up sessions will be arranged in order to examine the patient's functioning, maintenance and durability of the change.

Summary of Therapeutic Intervention

Rapport Building

To engage the patient in therapy and to continue a smooth flow of therapy, rapport was built with the patient by active listening, unconditional positive regard, and warm acceptance.A small talk and inquiring about hobbies and likes and dislikes of patient can be helpful in rapport establishing.

Psycho-education

Psycho-education of the patient and her family was done in order to make her aware of the severity and nature of her problem. She was also psycho-educated about her role in therapy.

ABC Model

It was explained to the patient by giving her the example from her daily life situations that how thoughts ,behaviors and emotions are interlinked to create any mental disorder.

Cost Benefits Analysis

The advantages and disadvantaged about expressing anger destructively were analyzed. The patient reported that she gained a lot of insight from it that anger can be beneficial temporary only and in the long run it is damaging a lot.

Coping Statements

The coping statements were taught to the patient to practice them in real life situations like "I can solve it", "I am strong enough".

Deep Breathing

The procedure of deep breathing was taught to the patient through modeling by the therapist and the patient practiced it during the session. It was instructed to the patient to take deep breaths while focusing on intake of cool air through her nostrils and release of warm air through mouth just like blowing the candle and do it whenever she felt stressful, headache or body aches. The patient reported that it was very effective in keeping her calm down during stress or pain in brain.

Correspondence concerning this article should be addressed to Amber Roohee, amber.roohee@gmail.com

Progressive Muscle Relaxation

The patient was explained to apply tension in her all muscles and then relax them to reduce stress and aches from your body.

Conversion Fit Chart

Patient or family was asked to record a chart. For example, how fit was started, what was its intensity on 0 to 10 rating scale and how it was finished and what was its duration and what other people did during fit to find out the triggers and maintaining factors ***(secondary gains)*** of patient fits. After that patient was able to get an insight of her symptoms.

Extinction and Differential Reinforcement

Johnson (2004) explained that extinction means removal of attention rewards permanently, following a problem behavior. This includes actions like not looking at the patient, not talking to the patient, or having no physical contact with the patient when patient exhibited faulty behavior. Patient's family was guided regarding the extinction.That patient's problematic behavior should not be reinforce by planned ignorance and only reinforced her positive behaviors.

Anger Management Techniques

Anger management was done with the patient to minimize the degree of anger and also to minimize the triggers and effects of anger. ABC model was explained to the patient by giving her example from her daily life. For this purpose cost and benefit analysis of anger was also done to give her insight about anger.

It was also explained to her with ***'Anger Thermometer'*** and ***'Traffic Light technique'*** and taught her that before showing any reaction think about it.It was explained to the patient that Red zone means Stop- Don't lash out! Use breathing techniques and count down from 10 or use other distraction techniques; Green zone means Wait- Think, what is wrong? What can I do? What are the consequences? What am I feeling? And Yellow zone means Go – keep calm, give positive suggestions to her and make a plan. Furthermore, distraction techniques such as drinking cold water, change the place, backward counting and writing anger letter etc were also taught to the patient.

Sleep Hygiene

The sleep hygiene principle was taught to the patient to deal with her sleep disturbance. The patient reported that she faced difficulty in falling asleep and wake before time. She also reported that flow of thoughts and headaches tends to keep her awake. She was educated to maintain regularity in the sleep–wake cycle timing, exercise regularly, but not within a few hours of bedtime, develop a relaxing evening routine, reserve the bedroom and bed for sleep and sexual activities, avoid caffeine after lunchtime, avoid alcohol, especially within a few hours of bedtime, avoid late heavy meals, but consider a small bedtime snack, avoid bedroom temperature extremes, avoid disruptive noises and avoid excessive wakeful time in bed.

Problem Solving Skills

The patient was taught about the problem solving skills in order to manage her problems effectively. The following steps were taught to the patient .The problem solving steps are divided in to 7 stages that are :

1) Orientation of the problem
2) Defining the problem
3) Setting goals
4) Generating alternate solutions
5) Choosing the best solution
6) Implementing the solution and
7) Evaluating its effects

Post Assessment

Table 7

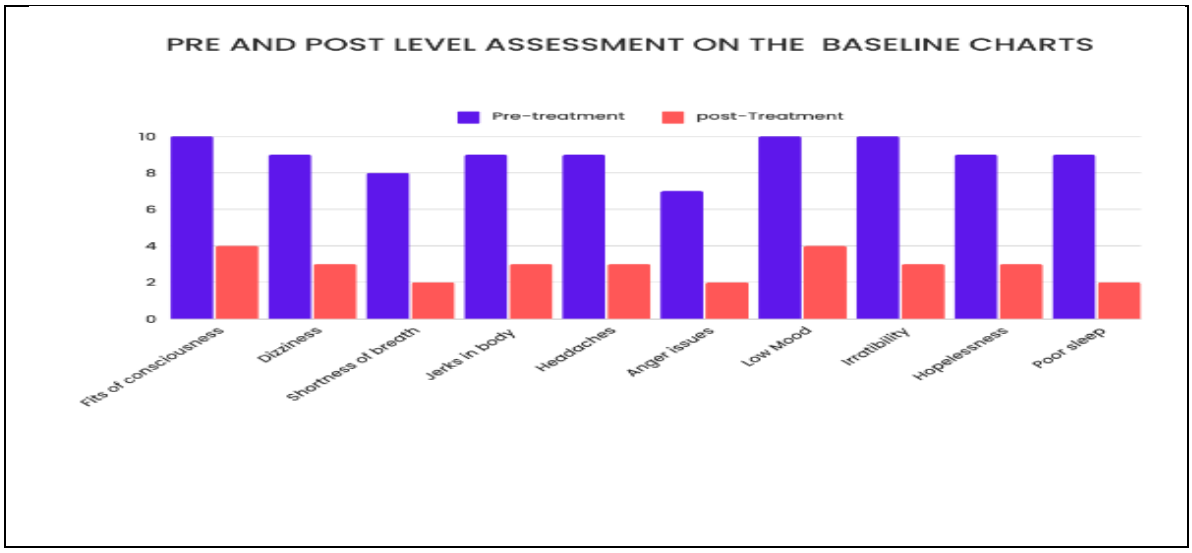
showing comparison of subjective ratings by patient on pre and post level.

Presenting Complaints	Pre-ratings (0-10)	Post-ratings (0-10)
Fits of unconsciousness	10	4
Dizziness	9	3
Shortness of breath	8	2
Jerks in body	9	3
Headache	9	3
Anger issues	7	2
Low mood	10	4
Irritability	10	3
Hopelessness	9	3
Poor sleep	9	2

Note: 0 =No Problem; 5 = Average Problem; 10 = Severe Problem

Correspondence concerning this article should be addressed to Amber Roohee, amber.roohee@gmail.com

Figure 2
Graphical representation of problematic behavior of patient



Therapeutic outcome

The patient was compliance towards the therapy.12 sessions were conducted with the patient .The Pre and Post assessment analysis revealed that she had made progress in several areas with 70% improvement.

Table 8

Summary of Sessions and Therapeutic Techniques

Session # 1 • Establishing Rapport • Intake interview • Baseline Charts/non-epileptic seizures charts • Mini-mental status exam • Psycho-education/Normalizing • Session summary & feedback • Home-assignments:Dysfunctional Thought Record (DTR)	**Session # 2** • Beck Depression Inventory administered • Slossan Drawing Test • Personal & sleep hygiene charts • Reassurance for Motivation • Placebo effect • Session summary & feedback • Home-assignments: DTR,Daily activity scheduling
Session # 3 • Home-assignments reviewing • Involving Family in counseling • Exploring traumas • Anger management • Rotter Incompelete Blank administered • Session summary & feedback • Home-assignments:DTR,Daily activity scheduling	**Session# 4** • Home-assignments reviewing • CBT socialization • Primary & secondary gains • Free association • Session summary & feedback • Home-assignments:DTR,Daily activity scheduling
Session# 5 • Home-assignments reviewing • Deep breathing and progressive muscle relaxation • Extinction and differential reinforcement • Idiosyncratic case conceptualization • Session summary & feedback • Home-assignments:DTR,Daily activity scheduling	**Session #6** • Set agenda • Gratitude list • ABC vicious circle • Coping strategies • Session summary & feedback • Home-assignments:DTR,Daily activity scheduling,coping strategies
Session #7 • Set agenda • Home-assignments reviewing • Diverting techniques • Triple column technique • Cost and benefit analysis • Session summary & feedback • Home-assignment: daily activity schedule	**Session #8** • Set agenda • Home-assignments reviewing • Problem solving techniques • Bereavement counselling • Assertiveness training • Session summary & feedback • Home-assignment: daily activity schedule
Session #9 • Set agenda • Home-assignment review of ABC problems • Cognitive restructuring • Session summary & feedback • Home-assignment: daily activity schedule and mastery	**Session #10** • Set agenda • Home-assignments reviewing • Socratic questioning/Guided discovery • Session summary & feedback • Home-assignment: daily activity schedule and mastery and

Correspondence concerning this article should be addressed to Amber Roohee, amber.roohee@gmail.com

and pleasure	pleasure
Session #11 • Set Agenda • Home-assignments reviewing • Social Skill strategies • Strategies for preventing relapse (Therapy Blueprint) • Session summary & feedback	**Session# 12** • Post-assessment • Mini mental status exam • Baseline Charts • BDI administered • BAI administered

References

Ahmad, Q. A., & Bokharey, I. Z. (2013). Resilience and coping strategies in the patients with conversion disorder and general medical conditions: a comparative study. *Malaysian Journal of Psychiatry*, *22*(1), 39-50.

American Psychiatric Association. (2022). Diagnostic and statistical manual of mental disorders (5th ed., text rev.). https://doi.org/10.1176/appi.books.9780890425787

Beck, A. T., Rush, A. J., Shaw, B. F., Emery, G., DeRubeis, R. J., & Hollon, S. D. (2024). *Cognitive therapy of depression*. Guilford Publications.

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of general psychiatry*, *4*(6), 561-571.

Comer, R. J. (2013). Abnormal Psychology, (Ed. 9th). New York: Worth Publishers.

De Vroege, L., Koppenol, I., Kop, W. J., Riem, M. M., & van der Feltz-Cornelis, C. M. (2021).Neurocognitive functioning in patients with conversion disorder/functional neurological disorder. *Journal of Neuropsychology*, *15*(1), 69-87.

Espay, A. J., Aybek, S., Carson, A., Edwards, M. J., Goldstein, L. H., Hallett, M., & Morgante, F. (2018). Functional neurological disorders: Current concepts in diagnosisand treatment. *JAMA Neurology*, *75*(9), 1132-1141.

Fobian, A. D., & Elliott, L. (2019). A review of functional neurological symptom disorder etiology and the integrated etiological summary model. *Journal of Psychiatry and Neuroscience*, *44*(1), 8-18.

Folstein, M., Folstein, S.E., McHugh, P.R. (1975). "Mini-Mental State" a Practical Method for Grading the Cognitive State of Patients for the Clinician. Journal of Psychiatric Research, 12(3); 189-198.

Freud, S. (1962). The Neuropsychosis of defence, 3. London, UK: Hogarth Press.

Gray, C., Calderbank, A., Adewusi, J., Hughes, R., & Reuber, M. (2020). Symptoms of posttraumatic stress disorder in patients with functional neurological symptom disorder. *Journal of Psychosomatic Research*, *129*, 109907.

Ijaz, T., Nasir, A., Sarfraz, N., & Ijaz, S. (2017). Psychometric properties of conversion disorder Scale-revised (CdS) for children. *J Pak Med Assoc*, *67*(5), 725-30.

Kaplan, H. I., Sadock, B. J., Baltimore, Williams & Wilkins. (1995).Somatoform disorders. Comprehensive Textbook of Psychiatry, 6, 1252-1258.

Kozlowska, K. (2017).A stress-system model for functional neurological symptoms. *Journal of the Neurological Sciences*, *383*, 151-152.

Looper, K. J., & Kirmayer, L. J. (2002). Behavioral medicine approaches to somatoform disorders. *Journal of consulting and clinical psychology*, *70*(3), 810.

Morris, L. S., To, B., Baek, K., Chang-Webb, Y. C., Mitchell, S., Strelchuk, D., & Voon, V. (2017). Disrupted avoidance learning in functional neurological disorder: implications for harm avoidance theories. *NeuroImage: Clinical*, *16*, 286-294.

Perez, D. L., Nicholson, T. R., Asadi-Pooya, A. A., Bègue, I., Butler, M., Carson, A. J., & Aybek, S. (2021). Neuroimaging in functional neurological disorder: state of the field and research agenda. *NeuroImage: Clinical*, *30*, 102623.

Roohee, A., & Sunbal, M. (2023). Gender differences: Paranormal beliefs and maladaptive emotional schemas. *Journal of Arts & Social Sciences*, *10*(1), 17-27.

Rotter, Julian B.; Rafferty, Janet E. (1950). *The Rotter Incomplete Sentences Blank. Manual, College Form*. New York, NY: The Psychological Corporation.

Slosson, R. L. Slosson Drawing Coordination Test for Children and Adults. East Aurora, NewYork: Slosson Educational Publications, 1967.

Sperry, L. (Ed.). (2015). *Mental health and mental disorders: An encyclopedia of conditions, treatments, and well-being [3 Volumes]*. Bloomsbury Publishing USA.