The International Journal of Indian Psychology
ISSN 2348-5396 (Online) | ISSN: 2349-3429 (Print)
Volume 11, Issue 3, July- September, 2023
DIP: 18.01.451.20231103, DOI: 10.25215/1103.451
https://www.ijip.in

Comparative Study

A Comparison between Effectiveness of Pharmacotherapy and Pharmacotherapy-Oriented- Psychotherapy in Patients with Anxiety Disorders

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ABSTRACT

A substantial amount of research has been conducted on the efficacy and effectiveness of cognitive-behavioral therapy (CBT) and pharmacotherapy for anxiety disorders such as posttraumatic stress disorder, obsessive-compulsive disorder, panic disorder, generalized anxiety disorder, social anxiety disorder, illness anxiety disorder, agoraphobia and specific phobia. The current article's goal is to offer a comparison between the effectiveness of two methods for treating anxiety disorders (pharmacotherapy and cognitive-behavioral therapy), as well as to describe and discuss current empirical studies on their effectiveness when applied together. In addition, we describe the challenges that emerge when using active CBT therapies and make recommendations for future study. Overall, pharmacotherapy when prescribed along with CBT appears to be useful and helpful in the treatment of anxiety disorders, but more research is needed to understand which individual therapy components contribute to positive outcomes and which patients are most likely to benefit from these treatment components.

Keywords: *Cognitive-Behavioral Therapy, Exposure, Anxiety Disorder, Post-Traumatic Stress Disorder, Obsessive-Compulsive Disorder, Panic Disorder, Generalized Anxiety Disorder, Social Anxiety Disorder, Specific Phobia*

Cognitive Behavioral Therapy is a skill-based treatment that aims to change dysfunctional emotional reactions. CBT has been demonstrated to be useful in the treatment of a wide range of mental health issues, including anxiety disorders. (Hans E, Hiller W, Clin Psychol, Rev. 2013 Dec; 33(8):954-64) CBT may be traced back to the theories of B. F. Skinner and Joseph Wolpe in part. Since its inception, behavioural therapy has expanded to encompass cognitive psychotherapy, which was pioneered by psychologists like Albert Eilis and Aaron T. Beck. Some of the most often utilised CBT strategies in the treatment of anxiety disorders are exposure-based procedures. Fear is represented by associative networks (cognitive fear structures) that store information about the feared stimulus, fear reactions, and the meaning of the stimuli and responses, according to emotional processing theory. There is a plethora of information available about these treatments and how to apply them, with entire volumes devoted to discussing CBT-based therapy for each individual anxiety problem. When the link between stimuli, reactions, and their meaning does not reflect reality, the fear structure becomes pathological. Fear is sustained through avoidance

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Received: June 7, 2023; Revision Received: September 27, 2023; Accepted: September 30, 2023

actions that prevent new learning from occurring. The goal of exposure treatment is to change the problematic fear structure by first activating it and then supplying fresh information that contradicts the harmful linkages in the structures. Fear is predicted to reduce through addressing the feared stimuli or reactions and incorporating correcting information into the fear memory. Exposure treatment, in general, has a short duration of roughly ten sessions. Interoceptive exposure, which is commonly employed in the treatment of panic disorder, is purposely producing the physical sensations that the patient worries are symptomatic of a panic attack. For anxiety disorders, the efficacy and effectiveness of exposure treatment have been widely demonstrated.

Exposure treatments for each anxiety disorder take on similar shapes, with variances most commonly surfacing in the emphasis on the content of exposure, which is relevant to the patient's presenting problems. Prolonged exposure therapy entails having the patient relive the trauma memory by seeing the events in their mind while telling the events aloud in therapy session. Other methods include writing a thorough narrative of the event and reading it aloud to process the trauma. Avoiding compulsive actions is a crucial element of treatment because compulsions maintain the relationship between obsessions and the dreaded consequences.

Exposure treatment for OCD is exposing the patient to the dreaded imagined circumstance and allowing anxiety to subside naturally without the use of compulsions. (Abramowitz JS. Variants of exposure and response prevention in the treatment of obsessive-compulsive disorder. *Behav Ther. 1996; 27:583–600.)*

According to a meta-analysis of panic disorder research, CBT, which largely consists of exposure therapy with or without cognitive therapy components, fared better than no treatment or a placebo control. *(Rosa-Alcázar AI, Sánchez-Meca J, Gómez-Conesa A, Marín-Martínez F, Clin Psychol Rev. 2008 Dec; 28(8):1310-25.)* There are few studies that look at exposure-based therapy in GAD patients. According to Rapee and Heimberg's CBT mode of anxiety, people who have social anxiety have distortions and biases in how they absorb social/evaluative information, which causes anxiety to rise. (Rapee RM., Heimberg RG. A cognitive-behavioral model of anxiety in social phobia. *Behav Res Ther*. 1997; 35:741–756). A GAD treatment protocol by Craske and Barlow has patients engage in self-guided exposures where patients repeatedly recount their worries using imaginal exposure to reduce the intensity of the worry. *(*Craske MG., Barlow DH. *Mastery of Your Anxiety and Worry. 2nd ed. New York, NY: Oxford University Press; 2006)*

In treating individuals with social anxiety disorder, more recent research discovered that exposure treatment combined with applied relaxation and cognitive therapy had better outcomes than a wait-list control. Cognitive therapy is frequently used in combination with behavioural approaches to treat anxiety problems. Cognitive therapy includes psychoeducation about the three-part model of emotion. CPT has been found in studies to be useful in lowering PTSD symptoms in both veterans and nonveterans. Many of the treatment regimens studied in treatment outcome studies mix exposure and cognitive therapy strategies, making conclusions regarding the proportional contributions of each modality difficult to draw. Cognitive Therapy for PTSD are not just cognitive therapy, but also include various exposure activities. EX/RP, which is also essentially an exposure-based therapy, incorporates cognitive processing after or during exposure to help OCD patients gain insight into their feared outcomes. Other research has indicated that cognitive treatment alone has comparable results to imaginal exposure. Despite this, drawing conclusions about the relative efficacy of

cognitive therapy versus exposure in the treatment of OCD is difficult. McLean and colleagues' cognitive therapy regimen begins with psychoeducation regarding OCD symptoms and an explanation of the treatment rationale.

Patients are then involved in a conversation concerning the link between triggers that cause intrusive thoughts and the patients' erroneous assessments of these thoughts, which causes anxiety and compulsions. Patients are then taught to recognise various types of distorted appraisals, such as overestimation of thought importance, overestimation of danger, inflation of responsibility, overestimation of danger consequences, overestimation of responsibility consequences, and need for certainty-control-perfectionism. Patients began to challenge these incorrect assessments by undertaking behavioural experiments to explore the evidence for and against their views. *(McLean PD, Whittal ML, Thordarson DS, Taylor S, Söchting I, Koch WJ, Paterson R, Anderson KW,* Cognitive versus behavior therapy in the group treatment of obsessive-compulsive disorder, *J Consult Clin Psychol. 2001 Apr; 69(2):205-14.)* Cognitive therapy has been demonstrated to be useful in the treatment of social anxiety disorder (GAD). Patients with GAD learn to adjust anxiety-inducing thought patterns, to confront risk-exaggerating beliefs, and to detect and change catastrophic thinking. According to other study, relaxing is just as beneficial as cognitive treatment in treating GAD. The GAD therapy handbook by Craske and Barlow teaches patients how to modify patterns of thinking that contribute to worry, question beliefs that exaggerate danger, and detect and change catastrophic thinking. (Craske MG., Barlow DH. *Mastery of Your Anxiety and Worry. 2nd ed. New York, NY: Oxford University Press; 2006*) Patients learn from Hofmann's model of social anxiety that social anxiety is maintained in part by having negative perceptions of oneself, overestimating the cost of a social mishap, believing that one has little control over one's emotional responses, and believing that one's social skills are inadequate. (*Hofmann SG* Cognitive factors that maintain social anxiety disorder: a comprehensive model and its treatment implications. *Cogn Behav Ther., 2007; 36(4):193-209.*) In terms of efficacy, a meta-analysis indicated that individual CBT was more helpful than a waitlist control in addressing social anxiety. (*Mayo-Wilson E, Dias S, Mavranezouli I, Kew K, Clark DM, Ades AE, Pilling S,* Psychological and pharmacological interventions for social anxiety disorder in adults: a systematic review and network meta-analysis. *Lancet Psychiatry. 2014 Oct; 1(5):368-76.*) The efficacy of cognitive treatment for certain phobias has shown conflicting findings. Although exposure therapy is seen to be the most effective treatment for specific phobias, it can be used with cognitive restructuring treatments. (Craske MG., Barlow DH., Antony MM. *Mastery of Your specific Phobia: Therapist Guide, Second Edition. New York, NY: Oxford University Press; 2006*)

Anxiety is frequent among people of all age groups. There are several therapy alternatives accessible, however present standards give inconsistency in recommending which treatment to utilise. In a study conducted by Wang Z. et al, Children and adolescents with verified diagnoses of panic disorder, social anxiety disorder, specific phobias, generalised anxiety disorder, or separation anxiety were included in randomised and nonrandomized comparative trials and received CBT, medication, or a combination of the two. Studies were chosen and data was gathered by independent reviewers. To pool data, random-effects meta- analysis was utilised. Primary anxiety symptoms (as judged by the child, parent, or clinician), remission, responsiveness, and adverse events were the main outcomes and measurements. In the study, a total of 7719 patients from 115 trials were included in the study. 4290 (55.6 percent) were female, with a mean (range) age of 9.2 (5.4-16.1) years. The results show that, compared to a placebo pill, selective serotonin reuptake inhibitors (SSRIs) substantially decreased main

anxiety symptoms and raised remission (relative risk, 2.04; 95 percent ci, 1.37-3.04) and response (relative risk, 2.04; 95 percent ci, 1.37-3.04). (Relative risk, 1.96; 95 percent ci, 1.60-2.40). Serotonin-norepinephrine reuptake inhibitors (SNRIs) decreased clinician-reported main anxiety symptoms considerably. Anxiety symptoms were not considerably reduced by benzodiazepines or tricyclics. CBT substantially reduced main anxiety symptoms, remission, and response when compared to wait-listing/no therapy. Cognitive behavioural treatment enhanced remission more than fluoxetine and decreased main anxiety symptoms more than sertraline.

Sertraline and CBT together decreased clinician-reported main anxiety symptoms and response more than either therapy alone. Head-to-head comparisons were limited, and network meta- analysis estimations were sloppy. Adverse effects were prevalent with medicines but not with CBT, and they were minor. Suicidality with SSRIs or SNRIs was assessed in studies that were either too small or too brief. In one study, venlafaxine caused a statistically insignificant increase in suicidal thoughts. Cognitive behavioural treatment had fewer dropouts than pill placebos or medicines. CBT and SSRIs have been shown in studies to be useful in lowering childhood anxiety symptoms. Based on less consistent data, serotonin-norepinephrine reuptake inhibitors appear to be useful as well. A need for study in the sector is head-to-head comparisons of various drugs and comparisons with CBT. (Wang, Z., Whiteside, S., Sim, L., Farah, W., Morrow, A. S., Alsawas, M., Barrionuevo, P., Tello, M., Asi, N., Beuschel, B., Daraz, L., Almasri, J., Zaiem, F., Larrea-Mantilla, L., Ponce, O. J., Leblanc, A., Prokop, L. J., & Murad, M. H. (2017).
Comparative effectiveness and safety of cognitive behavioral therapy and pharmacotherapy for childhood anxiety disorders: a systematic review and meta-analysis. Jama pediatrics, 171(11), 1049–1056. *https://doi.org/10.1001/jamapediatrics.2017.3036)*

What is anxiety?

Anxiety is an emotion characterized by feelings of tension, worried thoughts and physical changes like increased blood pressure. People with anxiety disorders usually have recurring intrusive thoughts or concerns. Anxiety feels different depending on the person experiencing it. Feelings can range from butterflies in your stomach to a racing heart. Anxiety disorders are the most prevalent mental condition. Anxiety disorders, contrary to popular assumption, may be treated fast and efficiently. The Yerkes-Dodson (Figure 1) curve depicts the distribution of anxiety levels in our community, from extremely high to very low. Anxiety may also have a good effect, such as making us more prepared to deal with adversity, more careful, protective, better workers, and higher achievers. The goal of treatment is to transcend this artificial boundary so that our patients may live more normal lives and benefit from the good consequences of their anxiety. Those of you who were scared by this animal have just gone through the fight or flight reaction. At some point in their life, everyone experiences the fight or flight reflex. However, for persons suffering from anxiety disorders, this defective warning signal sounds despite the absence of any visible threat.

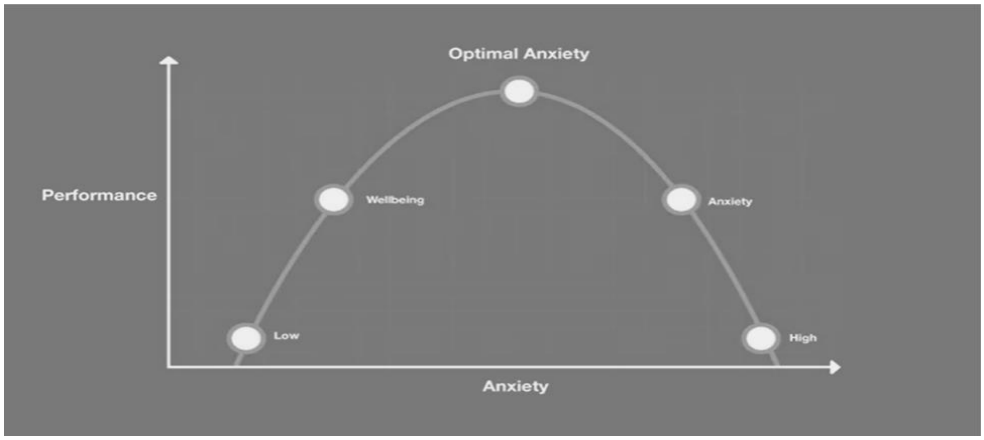

Figure 1: The Yerkes-Dodson Curve

What are the many kinds of anxiety disorders? Panic disorder is a common and generally easy-to-treat anxiety illness. Panic disorder develops when anxiety symptoms appear suddenly. They are terrifying, and sufferers believe they will endure forever or that they will have a stroke or a heart attack. People with panic disorder may avoid crowded places and regions such as shopping malls; this avoidance is known as agoraphobia. Generalized anxiety disorder is another relatively frequent anxiety illness. This is the worrying disorder, in which people worry excessively about daily events. This concern is uncontrollable, and it is related with symptoms such as stress, poor sleep, and poor focus. Social phobia may be a debilitating illness, having serious consequences for a person's ability to socialise via work friendships. Social phobia develops when a person is too concerned with how others see them in social interactions, which leads to avoidance of social encounters. Or circumstances in which they may be assessed by others, such as having to speak in front of a class or a group of people. There are several types of phobias. People not only dread spiders, birds, snakes, blood, heights, needles, and so on, but their fear is so strong that it causes them undue anguish. And they avoid a variety of things, to the point where it becomes a genuine annoyance in their life, and they are unable to function successfully at work or in their homes. Finally, there is obsessive compulsive disorder, known as OCD. OCD is an extremely burdensome and stressful illness, characterised by a wide range of obsessions and compulsions. These might include contamination anxieties and obsessive hand washing, constant doubts and checking, a desire for things to be symmetrical or precise, and intrusive and painful thoughts or pictures that are inappropriate or repulsive.

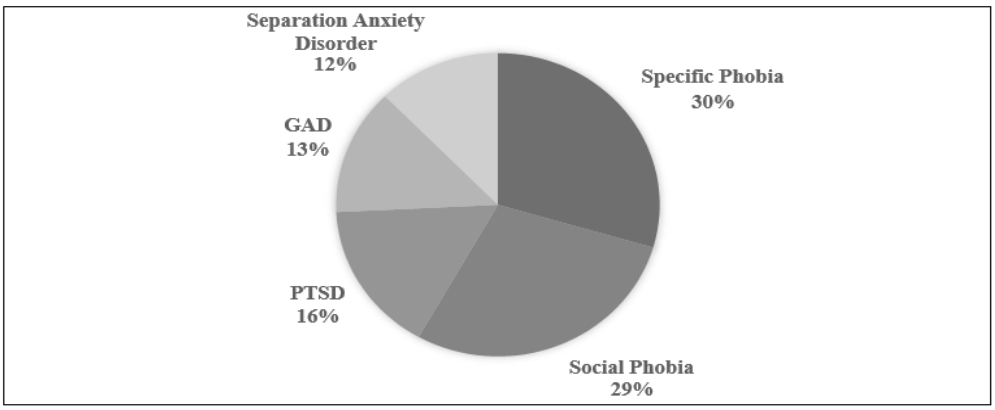

Figure 2 Top 5 Prevalent Anxiety Disorders

(Source: Clearvue Health, 3 Charts | Top 5 Anxiety Disorders in America 2021)

We have a huge selection of psychiatric drugs to treat everything from depression and anxiety to psychosis and addictions. New drugs are being created all the time in order to reduce adverse effects and improve efficacy. In the general public and in the media, psychiatric drugs have sparked debate. Some individuals are concerned that they are sometimes overprescribed, harmful, or inefficient. On the plus side, these drugs may truly save lives and help people reclaim their lives. It is critical for those suffering from mental illnesses to prioritise lifestyle concerns.

Exercise, healthier sleeping habits, and support from family and friends might help with certain minor diseases. Cognitive behaviour therapy, for example, is frequently used as a first-line treatment or in combination with medication. Psychiatric drugs fall into a variety of types.

Antidepressants are used to treat depression as well as anxiety disorders and can also be used in bipolar disorder. These drugs change the number of neurotransmitters in the brain, which are chemicals that allow brain cells to interact with each other. Antidepressants operate by increasing the levels of neurotransmitters called monoamines, which are thought to be low in persons who suffer from depression. They primarily affect serotonin and noradrenaline, raising their levels through a variety of ways. Selective serotonin reuptake inhibitors, or SSRIs, are the most often prescribed antidepressants these days. They stop serotonin from being sucked up into nerve cells by blocking the serotonin pump or transporter. In the 1980s, SSRIs were developed, and they changed the treatment of depression and anxiety. They have fewer negative effects in general than earlier medications. Some claim that SSRIs have contributed to an increase in drug prescriptions for common disorders like melancholy and bereavement. Tricyclics and monoamine oxidase inhibitors were the first antidepressants to be utilised. The first time they were employed was in the 1950s. They are quite successful for severe kinds of depression, and they have let many patients to recover and return home after protracted stays in hospitals.

Antidepressants like this are still used to treat severe depression today. Serotonin noradrenaline reuptake inhibitors, or SNRIs, as well as mirtazapine and agomelatine, are newer forms of antidepressants. The majority of antidepressants are also beneficial in the treatment of anxiety disorders. Some patients with anxiety who don't have depression may be startled to learn that they're being prescribed an antidepressant, but antidepressants are also effective anxiety therapies. Anxiety, despair, paranoid thoughts, and hearing voices are all symptoms that medications can help with. In a small percentage of people, they can produce side effects ranging from mild annoyances to chronic diseases, and in extreme cases, life-threatening situations.

Nausea, drowsiness, sleeplessness, changes in appetite, irritability, and sex life issues are all common adverse effects. It's a balancing act weighing the benefits and drawbacks of each drug.

The risk vs. reward equation is another name for it. In each category, such as antidepressants, there is now a wide range of drugs to choose from. Every person reacts to drugs in their own unique way. Unfortunately, it is not always feasible to forecast whether or not someone would respond well to a medicine or have adverse effects, or to determine the optimum prescription for a person ahead of time. Genetic testing is now being developed as a method of predicting pharmaceutical response. Sometimes we have to test several medications before we find the one that works best for us, and this may be a difficult process. Unlike alcohol, street drugs,

and recreational drugs, most mental medicines are not addictive. When you take addictive medications, your body develops a dependent on the drug over time, and you need higher amounts to have the same effect. Antidepressants, mood stabilisers, and antipsychotic medications do not have a high potential for addiction. When antidepressants are discontinued, however, some people develop discomfort. When prescription drugs are misused, they can become addicted. Benzodiazepines, which are used as sedatives or sleeping pills, as well as medicines like opiates and certain stimulants used to treat Attention-Deficit Hyperactivity Disorder, or ADHD, are among them. The amount of time a person needs to take medicine is determined by their unique situation. Before a favourable impact may be felt, the drugs must be taken regularly every day for several weeks. The medication's adverse effects are usually the worst in the first few days and then go away, so it's worth sticking with it. To avoid relapse, medication should usually be continued until the person has made a complete recovery and even beyond. Even if a person appears to be in perfect health, it is critical to get medical advice before discontinuing medication. Some drugs will have to be progressively lowered. Taking drugs for longer than required might be harmful, especially if you have health problems like weight gain or diabetes. Maintaining contact with your doctor is essential for medication effectiveness. It's critical to notify your psychiatrist if the drug isn't working or if you have any negative effects. A clinician will take the time to listen to the problems and explore alternatives. With so many various types of drugs available, it's always possible to switch or lessen the dosage. It is feasible for many people to discontinue taking medicine completely, but this should always be done under physician supervision.

Symptoms of Anxiety

The symptoms are offered to aid in the identification of a panic attack; however, a panic attack is not a mental condition and so cannot be coded. Panic attacks can arise as a result of any anxiety disorder, as well as other mental illnesses and physiological diseases When a panic episode is detected, a specifier should be included (for example, "posttraumatic stress disorder with panic attacks"). The existence of panic attacks is included in the criteria for panic disorder, and panic attack is not utilized as a distinguishing factor. An acute rush of anxiety or pain that lasts for a few minutes and includes four (or more) of the following symptoms: Note that the sudden spike can occur in either a calm or worried condition.

1. Sweating.
2. Palpitations,
3. pounding heart, or accelerated heart rate.
4. Trembling or shaking.
5. Sensations of shortness of breath or smothering.
6. Feelings of choking
7. Chest pain or discomfort
8. Nausea or abdominal distress
9. Feeling dizzy, unsteady, light-headed, or faint
10. Chills or heat sensations
11. Paresthesias (numbness or tingling sensations)
12. Derealization (feelings of unreality) or depersonalization (being detached from oneself)
13. Fear of losing control or “going crazy.”
14. Fear of dying.

Note: Culture-specific symptoms (e.g., tinnitus, neck soreness, headache, uncontrollable screaming or crying) may be seen. Such symptoms should not count as one of the four required symptoms.

Biological Mechanism of Anxiety

Certain symptoms of autonomic nervous system stimulation include cardiovascular (e.g., tachycardia), muscular (e.g., headache), gastrointestinal (e.g., diarrhea), and respiratory symptoms (e.g., tachypnea). Some people with anxiety disorders, particularly those with panic disorder, have increased sympathetic tone, adapt slowly to repeated stressors, and respond excessively to mild stimuli. (Sadock et al., *Synopsis Psychiatry* 2018)

Based on animal research and pharmacological treatment reactions, there are three primary neurotransmitters related with anxiety: norepinephrine (NE), serotonin, and y- aminobutyric acid (GABA). Animal trials utilising behavioural paradigms and psychoactive drugs provide most of the basic neurobiological knowledge regarding anxiety. The conflict test, in which the animal is simultaneously exposed with positive and negative stimuli, was one such experiment used to explore anxiety. Anxiolytic medicines (such as benzodiazepines) aid in the animal's adaptation to this circumstance, but other drugs (such as amphetamines) further impair the animal's behavioural responses. (Sadock et al., *Synopsis Psychiatry* 2018)

Chronic symptoms of anxiety disorder, such as panic episodes, sleeplessness, startle, and autonomic hyperarousal, are indicative of elevated noradrenergic function. The prevailing assumption about the involvement of norepinephrine in anxiety disorders is that people with anxiety disorders may have a poorly regulated noradrenergic system with periodic bursts of activity. The nor-Adrenergic system's cell bodies are largely found in the Rostral pons' locus ceruleus, and its axons go to the cerebral cortex, limbic system, brainstem, and spinal cord. Experiments in monkeys have shown that stimulating the locus ceruleus causes the animals to dread, and that ablation of the same region slows or entirely eliminates the animals' capacity to create a fear response. (Sadock et al., *Synopsis Psychiatry* 2018)

Human investigations have indicated that B-adrenergic receptor agonists (e.g., isoproterenol [Isuprel]) and α2-adrenergic receptor antagonists (e.g., yohimbine [Yocon]) can cause frequent and severe panic episodes in people with panic disorder. Clonidine (Catapres), an α2-receptor agonist, on the other hand, lowers anxiety symptoms in various experimental and therapeutic conditions. A less consistent observation is that people with anxiety disorders, notably panic disorder, have higher levels of the noradrenergic metabolite 3-methoxy-4-hydroxyphenylglycol in their cerebrospinal fluid (CSF) or urine (MHPG). (Sadock et al., *Synopsis Psychiatry* 2018)

Numerous studies have found that several types of psychological stress enhance the production and release of cortisol. Cortisol mobilises and replenishes energy stores, and it contributes to heightened alertness, vigilance, focused attention, and memory formation; suppression of the growth and reproductive systems; and immune response containment. Excessive and persistent cortisol production can result in major side effects such as hypertension, osteoporosis, immunosuppression, insulin resistance, dyslipidemia, dyscoagulation, and, eventually, atherosclerosis and cardiovascular disease. PTSD has been linked to changes in the function of the hypothalamic-pituitary-adrenal (HPA) axis. Some researches have found that individuals with panic disorder had attenuated adrenocorticoid hormone (ACTH) responses to corticotropin-releasing factor (CRF), whereas others have not. (Sadock et al., *Synopsis Psychiatry* 2018)

CRH, one of the most significant stress mediators, coordinates the adaptive behavioural and physiological changes that occur under stress. Stress raises CRH levels in the hypothalamus, resulting in HPA axis activation and increased cortisol and dehydroepiandrosterone release (DHEA). CRH also suppresses a number of neurovegetative processes, including food intake, sexual activity, and endocrine growth and reproduction programmes. (Sadock et al., *Synopsis Psychiatry* 2018)

The discovery of several serotonin receptor types has fueled interest in the function of serotonin in the aetiology of anxiety disorders. Acute stress causes an increase in the turnover of 5-hydroxytryptamine (5-HT) in the prefrontal cortex, nucleus accumbens, amygdala, and lateral hypothalamus. The fact that serotonergic antidepressants have therapeutic efficacy in some anxiety disorders—for example, clomipramine (Anafranil) in obsessive-compulsive disorder— sparked research in this relationship (OCD). The efficacy of buspirone (BuSpar), a serotonin 5- HT1A receptor agonist, in the treatment of anxiety disorders reveals a link between serotonin and anxiety. Most serotonergic neurons have cell bodies in the raphe nuclei of the rostral brainstem and project to the cerebral cortex, limbic system (particularly the amygdala and hippocampus), and hypothalamus. (Sadock et al., *Synopsis Psychiatry* 2018)

Several reports indicate that meta-chlorophenylpiperazine (mCPP), a drug with multiple serotonergic and nonserotonergic effects, and fenfluramine (Pondimin), which causes the release of serotonin, cause increased anxiety in patients with anxiety disorders; and many anecdotal reports indicate that serotonergic hallucinogens and stimulants, such as lysergic acid diethylamide (LSD) Clinical investigations of 5-HT function in anxiety disorders have yielded conflicting results. One research discovered that individuals with panic disorder had lower amounts of circulating 5-HT than control volunteers. As a result of the examination of peripheral blood components, no obvious pattern of alteration in 5-HT function in panic disorder has revealed. (Sadock et al., *Synopsis Psychiatry* 2018)

The unquestionable efficacy of benzodiazepines, which increase GABA activity at the GABA type A (GABA) receptor, in the treatment of specific forms of anxiety disorders clearly supports a role for GABA in anxiety disorders. Although low-potency benzodiazepines are more useful in treating the symptoms of GAD, high-potency benzodiazepines such as alprazolam (Xanax) and clonazepam are beneficial in treating panic disorder. Autonomic nervous system signs of anxiety disorders are elicited in primates when a benzodiazepine inverse agonist, ß- carboline-3-carboxylic acid (BCCE), is delivered. Normal control volunteers are likewise anxious as a result of BCCE. Flumazenil (Romazicon), a benzodiazepine antagonist, produces recurrent severe panic episodes in people with panic disorder. These findings have prompted researchers to suspect that certain people with anxiety disorders have aberrant GABAA receptor activity, albeit this link has yet to be proven. (Sadock et al., *Synopsis Psychiatry* 2018)

A neurotransmitter model for anxiety disorders is based on Nobel Prize winner Eric Kandel, M.D.'s research on Aplysia californica. Aplysia is a sea snail that moves away from dan ger by retiring within its shell and limiting its feeding activities. These behaviours can be classically conditioned in such a way that the snail reacts to a neutral stimulus as if it were a threatening stimulus. Random shocks can also sensitise the snail, causing it to fly even when there is no true threat. Classical training and human phobic anxiety have previously been linked. The classically conditioned Aplysia exhibits quantifiable alterations in presynaptic facilitation, resulting in enhanced neurotransmitter release. Despite the fact that the sea snail

is a basic animal, this study demonstrates an experimental approach to complicated neurochemical mechanisms that may be implicated in anxiety problems in people. (Sadock et al., *Synopsis Psychiatry* 2018)

Neuropeptide Y (NPY) is a 36-amino acid peptide that is highly conserved and one of the most prevalent peptides detected in mammalian brain. The evidence for the amygdala's participation in the anxiolytic effects of NPY is strong, and it most likely happens via the NPY- Y1 receptor. NPY inhibits corticotropin-releasing hormone (CRH) and LC-NE systems at brain regions involved in the expression of anxiety, fear, and sadness. Preliminary research in special operations troops subjected to intensive training stress indicates that increased NPY levels are connected with improved performance. Galanin is a peptide that includes 30 amino acids in humans. It has been shown to participate in a variety of physiological and behavioural activities, including learning and memory, pain management, food intake, neuroendocrine control, cardiovascular regulation, and, most recently, anxiety. The LC has a rich galanin immunoreactive fibre system that innervates forebrain and midbrain areas such as the hippocampus, hypothalamus, amygdala, and prefrontal cortex. Galanin administration centrally modifies anxiety-related behaviours in rats, according to research. Galanin and NPY receptor agonists might be new antianxiety medication targets. (Sadock et al., *Synopsis Psychiatry* 2018)

A variety of brain imaging investigations, virtually usually carried out with a specific anxiety condition in mind, have yielded various promising leads in the understanding of anxiety disorders. Structural studies, such as computed tomography (CT) and magnetic resonance imaging (MRI), occasionally reveal an increase in the size of the cerebral ventricles. The length of time patients had been taking benzodiazepines was shown to be associated to the rise in one research. In one MRI investigation, individuals with panic disorder had a particular abnormality in the right temporal lobe. Several additional brain imaging investigations have found aberrant results in the right hemisphere but not in the left hemisphere; this discovery implies that certain types of cerebral asymmetries may have a role in the development of anxiety disorder symptoms in particular people. Functional brain imaging (fMRI) studies of patients with anxiety disorder, such as positron emission tomography (PET), single-photon emission computed tomography (SPECT), and electroencephalography (EEG), have revealed abnormalities in the frontal cortex, occipital and temporal areas, and, in a study of panic disorder, the parahippocampal gyrus. The caudate nucleus has been implicated in the pathogenesis of OCD in several functional neuroimaging investigations. fMRI studies on posttraumatic stress disorder have revealed increased activity in the amygdala, a brain area linked with fear.

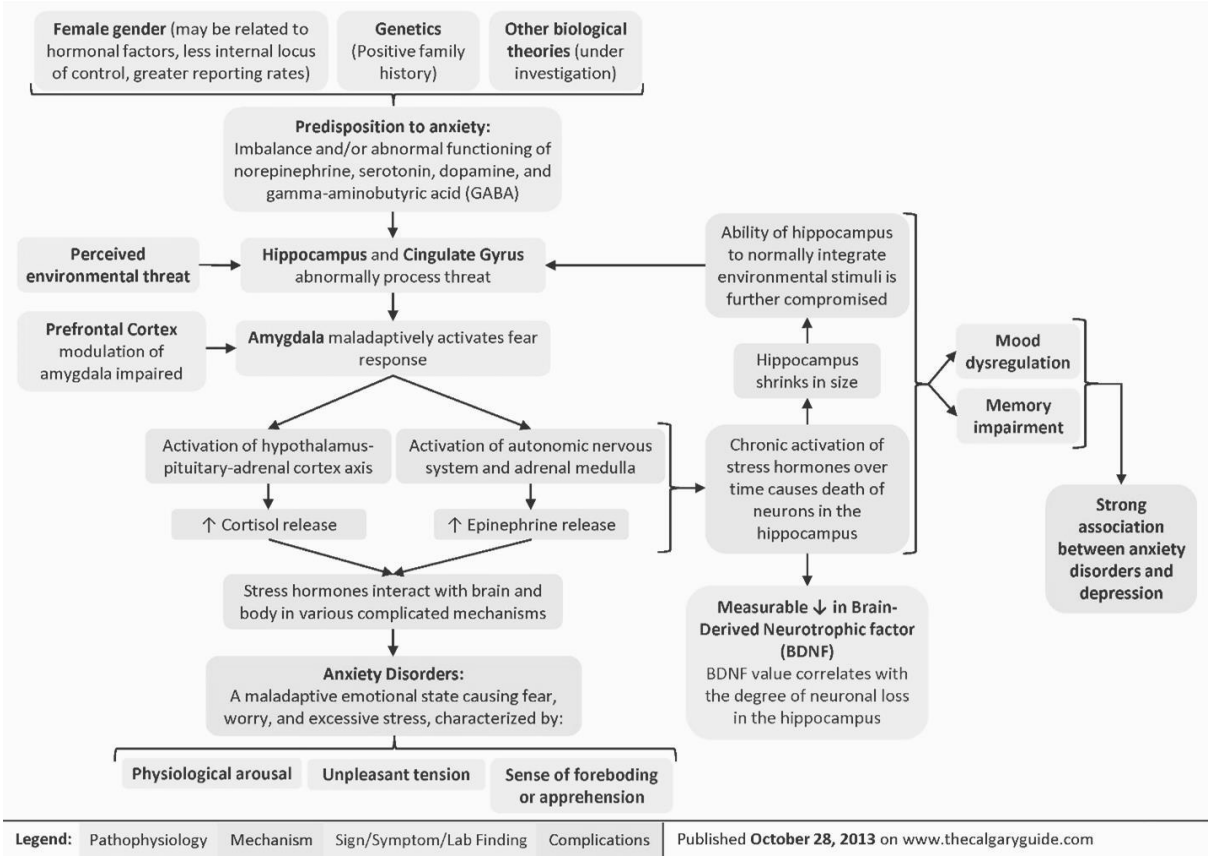

Figure 3 Biological Mechanism of Anxiety

(Yu et al., Pathogenesis of Anxiety Disorders | Calgary Guide 2021)

According to a conservative interpretation of these results, some individuals with anxiety disorders have a clear functional brain pathological state, which may be causally connected to their anxiety disorder symptoms. Hereditary research has established that at least one genetic factor contributes to the development of anxiety disorders. Heredity has been identified as a risk factor for the development of anxiety disorders. Almost half of all panic disorder patients have at least one afflicted family. Although the estimates for other anxiety disorders are not as high, they do show that the condition is more common among first-degree relatives of afflicted individuals than in relatives of non-affected people. Although no research with anxiety problems in adoption have been published, evidence from twin registries support the concept that anxiety disorders are at least partially genetically determined. There is clearly a relationship between genetics and anxiety disorders, but no anxiety condition is likely to be caused by a simple mendelian aberration. According to one study, a polymorphic version of the gene encoding the serotonin transporter, which is the site of action for many serotonergic medications, accounts for around 4% of the inherent variability of anxiety in the general population. Individuals with the mutation create less transporter and are more anxious. (Sadock et al., *Synopsis Psychiatry* 2018)

A scientific team lead by National Institute of Mental Health recipient and Nobel Laureate Dr Eric Kandel discovered in 2005 that knocking out a gene in the brain's fear hub produces mice who are unaffected by events that would ordinarily elicit instinctual or trained fear reactions. The gene encodes stathmin, a protein required for the amygdala to create fear memories. Stathmin knockout mice were less anxious when exposed to a tone previously connected with

a shock, indicating less learnt fear. The mutant mice were also more willing to explore unfamiliar open space and maze surroundings, indicating a lack of intrinsic fear. Kandel proposes that stathmin knockout mice can be utilised as a model for anxiety states associated with mental illnesses that include both inherent and acquired fear components. It has to be seen whether stathmin is similarly expressed and important for anxiety in the human amygdala.Considerations for Neuroanatomy The raphe nuclei and the locus ceruleus principally project to the limbic system and the cerebral cortex. These regions, when combined with data from brain imaging investigations, have become the focus of extensive hypothesis-forming concerning the neuroanatomical underpinnings of anxiety disorders. (Sadock et al., *Synopsis Psychiatry* 2018)

The limbic system includes a high concentration of GABA receptors, in addition to receiving noradrenergic and serotonergic innervation. Nonhuman primate ablation and stimulation experiments have also linked the limbic system in the production of anxiety and terror responses. Increased activity in the septohippocampal pathway, which may contribute to anxiety, and the cingulate gyrus, which has been implicated notably in the pathophysiology of OCD, have attracted significant attention in the literature. (Sadock et al., *Synopsis Psychiatry* 2018)

Because the frontal cerebral cortex is linked to the parahippocampal area, the cingulate gyrus, and the hypothalamus, it may have a role in the development of anxiety disorders. The temporal cortex has also been linked to anxiety disorders as a pathological location. This relationship is based in part on clinical and electrophysiological similarities between certain individuals with temporal lobe epilepsy and people with OCD. (Sadock et al., *Synopsis Psychiatry* 2018)

Causes of Anxiety

According to Edmund Bourne (2000), author of the best-selling The Anxiety & Phobia Workbook, individuals, even experts, frequently propose single-cause explanations for anxiety disorders. Many individuals propose oversimplified reasons for anxiety problems. Common "explanations" include:

1. brain imbalances,
2. traumatic childhood occurrences,
3. catch-all blaming...
4. Ineffective parenting.

Each of these explanations has some validity. Anxiety disorders, on the other hand, are far more complicated. Anxiety disorders are caused by a variety of biological, psychological, and social variables that all combine to generate and sustain these illnesses. The biopsychosocial model is commonly used by anxiety professionals to explain anxiety and anxiety disorders. According to the *biopsychosocial paradigm*, there are several and interconnected causes of pathological anxiety. These factors may be divided into three categories:

1. biological causes,
2. psychological causes, and
3. environmental or societal causes.

When psychologists use the term "environment," they imply everything that is going on around us. In this context, environment refers to our life experiences, notably our social relationships with others, including caretakers, family members, and so on. In theory, people

acquire anxiety disorders when they have both biological and psychological "vulnerabilities," as well as a social context that triggers or sets off these vulnerabilities. The biopsychosocial model's biological component relates to the body's physiological, adaptive reactions to fear. It also refers to "inherited" genetic features and brain functioning. What is handed down is a hereditary susceptibility manifested as a "personality type" (Bourne, 2000). In the midst of stress, this personality type characterises someone who is more reactive, sensitive, and/or readily agitated.

Although we are born with a biologically established, increased sensitivity to stress, this alone is not enough to cause an anxiety condition. The biopsychosocial model's psychological components pertain to our ideas, beliefs, and perceptions about our experiences, our environment, and ourselves. These cognitive tendencies have an impact on our apparent sense of control over our surroundings. These cognitive processes also impact how we judge and interpret events in our surroundings as potentially dangerous or not. These ideas (cognitions) about our surroundings and ourselves play an important part in the development of an anxiety condition. As previously stated, anxiety arises from a perceived disparity between one's anticipated capacity to cope with a challenge and the estimated difficulty of the work itself. According to Barlow (2002), if biological and psychological vulnerabilities are established, an individual may "learn" from their social context (such as their family) to direct their anxiety toward certain things or circumstances in their surroundings. As a result, the model's social component refers to environmental influences that can activate, modify, and enhance biological and psychological vulnerabilities.

Environmental variables might include pressures that impact everyone, such as the horrific events of 9/11. They can also be more individualised pressures that not everyone experiences. This might be financial hardship, the death of a loved one, or the loss of a pet. Our social environment has a variety of role models that can have a big impact on any pre-existing vulnerabilities. Consider teenage peer groups to demonstrate the function of role models in the development of anxiety disorders. These peer groups frequently provide strong ideas regarding which habits would assist or damage someone's prospects of getting into the "in crowd." Adolescents learn what actions and attitudes will help them become accepted, or at least not rejected, by their peers by seeing how their peers behave. Although some anxiety about peers' judgments is developmentally typical, some teenagers are especially sensitive to their peers' opinions. They may get too obsessed with their peers' assessments. Ironically, their extreme obsession interferes with the same connections and peer praise they seek so badly. Unfortunately for many young people, this fixation frequently leads to clinical levels of concern, avoidance behaviour, and anxiety. (Jacofsky et al., *The Biopsychosocial Model: Causes of Pathological Anxiety - Anxiety Disorders* 2021)

What is Pharmacotherapy?

Psychopharmaceuticals are drugs that have a therapeutic impact on the central nervous system, therefore improving pathological alterations in the experience and behaviour of mental diseases. Psychopharmaceuticals are classified into numerous categories based on their method of action and use.

1. Antidepressants (drugs for the treatment of depression)
2. Anxiolytics (antianxiety drugs)
3. Phase prophylactics (medications for mood stabilization and relapse prevention during depression and mania)

4. Neuroleptics (drugs used to treat various psychotic conditions with disorders of thought and perception)
5. Tranquilizers (anti-anxiety drugs),
6. Hypnotics (sleeping pills)
7. Anti-dementia drugs or nootropics (drugs for the treatment of dementia)
8. Psychostimulants (medications currently used mainly for the treatment of certain types of attention disorders)

Contrary to popular opinion, most psychopharmaceuticals are neither addictive nor capable of altering the patient's personality. Rather, they aid in the relief of illness symptoms, enhance mood and anxiety, and provide a pathway to increased vitality and quality of life for many people. The therapeutic use of antidepressants is essential, especially in the event of severe depression. Furthermore, psychopharmacotherapy allows for the stabilisation of the psychological state required for the use of other therapeutic processes, such as various types of psychotherapy. Psychopharmaceuticals, like all other successful medications, have adverse effects. The newest formulations, on the other hand, are generally well accepted. Moreover, any negative side effects are readily exceeded by the therapeutic benefits. We recognise the necessity for individualised antidepressant therapy in our clinical practise since some depressed patients react well to a certain medicine while others do not. A change is both logical and required if a drug is not tolerated or effective enough. Several therapy options may need to be attempted before finding the most efficient and well-tolerated drug for the person. Even if the patient's mental health improves, he or she should continue to take the medicine for a length of time to avoid a recurrence. The length of time the medicine is needed is determined by the severity of the sickness and the number of prior illnesses, as well as the patient's personal circumstances.

Without first consulting with the treating physician, psychopharmaceuticals should never be modified in dose or formulation, or terminated. Because the disease's symptoms may recur, it's important to keep an eye on them. If the patient and doctor agree to stop taking the medicine, it must typically be weaned off gradually. This will prevent any disturbing side effects that may develop if the medicine is abruptly discontinued.

Table 1: Drugs used in the study

Type	**Generic Name**	**Trade Name**
Serotonin Reuptake Inhibitors	Escitatopram	Nexito, Rexipra
	Sertraline	Sestima, Zosert
	Paroxetine	Paxidep, Pexep
Benzodiazepines	Clonazepam	Petril, Lonazep
	Alprazolam	Alprex
	Zolpidem	Zolfresh
Beta-Blocker	Propranolol	Betacap

Cognitive-Behavioral Therapy

CBT is a cognitive-behavioral therapy that integrates cognitive and behavioural therapies and has good empirical backing for treating mood and anxiety problems. Because emotions are difficult to change directly, CBT focuses on modifying ideas and actions that contribute to uncomfortable emotions. Brief CBT is the condensing of CBT curriculum and the reduction of 12-20 sessions into four to eight sessions. Brief CBT focuses on particular therapies for a small number of the patient's concerns. Because of the restricted number of sessions and the patient's obligation to employ supplementary reading materials and assignments to aid in his or her therapeutic improvement, treatment specificity is essential. The duration of brief CBT varies from patient to patient and provider to physician. Working within a "session-limited framework" is generally beneficial, in which the patient receives four to six sessions of "active" therapy, followed by one or more follow-up sessions at increasing intervals following the active-treatment period. (Chambless & Ollendick, 2001; DeRubeis & Crits-Christoph, 1998)

Socratic Questioning.

The use of questions, a crucial and widely utilised cognitive strategy, allows the client to break out from fixed patterns of dysfunctional thinking and see things from fresh perspectives. Inquisitive inquiries that gently push the client and urge him or her to become actively involved in obtaining solutions are used in Socratic questioning. Socratic questions are frequently employed for the following reasons:

1. Clarification
2. Investigating assumptions and evidence
3. Questioning points of view and views
4. Examining the ramifications and repercussions
5. Recapitulating and synthesizing

Socratic inquiry, when applied correctly, may assist clients in engaging in the process of guided discovery. A sequence of questions is used in guided exploration to assist clients reflect on how they process information. Clients can explore alternate ways of thinking and behaving by answering questions. (Cully, J.A., & Teten, A.L. 2008.)

Journaling

Clients are frequently advised to make notes of their automatic thoughts that arise in stressful situations and to identify emotions connected with these ideas during the initial period of treatment. The notebook can be used to assist discover cognitive mistakes buried in one's habitual thinking, suggest reasonable alternatives, and document the effect of making these adjustments as the client gains knowledge and experience with CBT. (Cully, J.A., & Teten, A.L. 2008.)

Cognitive Restructuring

Cognitive restructuring is the process of replacing cognitive distortions with more accurate and beneficial thinking. There are two essential phases to cognitive restructuring:

1. Recognising the ideas or beliefs that are affecting the upsetting feeling
2. Utilising logic and evidence to assess their correctness and usefulness, and, if necessary, altering or replacing the thoughts with more accurate and beneficial ones.

CBT emphasises that this is best accomplished as a collaborative process in which the client is encouraged to take the lead as much as possible. As a consequence, the psychotherapist

avoids making the assumption that the client's thoughts are skewed. Instead, the psychotherapist strives to lead clients with questions that will assist them in making their own findings. (Cully, J.A., & Teten, A.L. 2008.)

Cognitive Rehearsal

The psychotherapist and the client collaborate in cognitive rehearsal to identify solutions to particular problems by "rehearsing" the circumstance in which the problem is most likely to arise. A client, for example, may utilise her imagination to imagine having a pleasant connection or experience with her new in-laws. She would then mentally rehearse the actions required to accomplish this objective with the therapist's assistance. (Cully, J.A., & Teten, A.L. 2008.)

Validity Testing

The psychotherapist uses validity testing to challenge the validity of a client's ideas or thoughts, allowing the client to defend his or her point of view using objective data. If the client is unable to support the views, the therapist brings out the flaw in the client's reasoning. (Cully, J.A., & Teten, A.L. 2008.)

Guided Imagery

The use of colorful or metaphorical language to assist clients relax, meditate, gain confidence, enhance mood, acquire comprehension, and increase future personal performance and growth is referred to as guided imagery. When the individual conducting guided imagery is already calm, it is thought to be more successful. When employing guided imagery, the psychotherapist assists clients in imagining and summoning a scene, location, or state of being that may be used to accomplish therapeutic goals either within or outside of the treatment session. (Cully, J.A., & Teten, A.L. 2008.)

Imagery-Based Exposure

One type of imagery-based exposure is recalling a recent memory that elicited strong, unpleasant emotions. Labeling the feelings and ideas experienced during the recollection, as well as the behavioural desires present, is also required. Imagery-based exposure can assist to reduce the likelihood of intrusive or traumatic memories triggering rumination. Psychotherapists utilise this approach with care after verifying that the client has the required coping abilities to deal with the unpleasant emotions that are manifesting. (Cully, J.A., & Teten, A.L. 2008.)

Activity and Pleasant Event Scheduling

Activity and enjoyable event planning are frequently employed to assist depressed individuals in resolving difficulties with low energy. They entail gathering a baseline of activities over the course of a day or week, rating those activities based on their level of mastery or gratification, and then collaboratively designing changes that will reactivate the client, stimulate a greater sense of joy in life, or change patterns of social isolation or procrastination. (Cully, J.A., & Teten, A.L. 2008.)

Graded Task Assignments

Problems are split down into components in graded work assignments, and a step-by-step management plan is devised. Graded work assignments are used to help clients cope with situations that appear exceptionally difficult or overwhelming. (Cully, J.A., & Teten, A.L. 2008.)

Abdominal Breathing

The process of breathing by squeezing the diaphragm and extending the abdomen is referred to as abdominal breathing. Abdominal breathing is often regarded as the most efficient approach to alleviate stress. With the advancement of new technology, abdominal breathing is sometimes combined with biofeedback to assist clients in reinforcing their attempts to self-regulate. (Cully, J.A., & Teten, A.L. 2008.)

Exposure and Response Prevention

The act of purposefully exposing a client to a feared stimuli (e.g., dirt) and helping her or him in avoiding typical behaviors conducted in response to that feared stimulus is known as exposure and response prevention (e.g., washing hands). This is regarded as one of the most powerful behavioural methods. Protocols for exposure might be either quick or gradual. A hierarchy of exposure episodes is often constructed, with progressive increments in the degree of anxiety elicited. Clients are advised to gradually expose themselves to these stimuli until the anxiety reaction subsides and they achieve a sense of control and mastery. Progressive relaxation and abdominal breathing techniques can also help to lower autonomic arousal and assist the exposure process. Cognitive rehearsal is a technique that is frequently used to prepare for exposure and response avoidance. (Cully, J.A., & Teten, A.L. 2008.)

Writing in a Journal?

Clients use a "thought record," which is also known as a "thought journal," to write down their ideas so that they may be analysed, generally with the help of a psychotherapist. This allows clients to reflect on their thoughts after an experience when they are not responding in fear or fury. As a result, writing can aid with both behavioural and cognitive results. (Cully, J.A., & Teten, A.L. 2008.)

Systematic Positive Reinforcement

A behavioural strategy in which a psychotherapist encourages a client to reward positive or adaptive actions with something enjoyable is known as systematic positive reinforcement. This strategy is also effective since it entails withholding a specific reinforcement in response to maladaptive behaviour. (Cully, J.A., & Teten, A.L. 2008.)

Homework

Homework is a task or "assignment" given by psychotherapists to clients to help them progress between therapy sessions. Reading or practising coping strategies taught in therapy might be assigned as homework (e.g., abdominal breathing). (Cully, J.A., & Teten, A.L. 2008.)

Flooding

Flooding involves repeatedly and strongly exposing people to fear-inducing stimuli. During floods, clients are unable to flee or escape the frightened stimuli. (Cully, J.A., & Teten, A.L. 2008.)

Modeling

Modeling employs role-playing to teach proper responses to tough situations. The client uses this strategy to overcome difficulties in her or his life by using the psychotherapist as a model. (Cully, J.A., & Teten, A.L. 2008.)

Biofeedback

Biofeedback therapy is a technique that trains people to improve their health by controlling certain bodily processes that normally happen involuntarily, such as heart rate, blood pressure, muscle tension, and skin temperature. Patches, called electrodes, are placed on different parts of your body to measure your heart rate, blood pressure, or other function. A monitor is used to display the results. With help from a biofeedback therapist, they will describe a situation and guide you through relaxation techniques. The monitor lets you see how your heart rate and blood pressure change in response to being stressed or remaining relaxed. Initially, you will use the monitor to see your progress, but eventually you will be able to achieve success without the use of a monitor or electrodes. Biofeedback is an effective therapy for many conditions, but it is primarily used to treat high blood pressure, tension headache, migraine headache, chronic pain, and urinary incontinence.

Biofeedback Techniques

Several biofeedback approaches can be used to collect data on a person's physical reactions. The one utilised is decided by a biofeedback practitioner based on individual health circumstances and goals. Machines and procedures that may be used include:

1. **Electroencephalogram (EEG):** An EEG measures the activity of brain waves associated with various mental states such as awake, relaxation, tranquility, light sleep, and profound sleep. This is also referred to as neurofeedback.
2. **Electromyogram (EMG):** An EMG measures muscle tension using electrodes or other forms of sensors. The EMG makes a patient aware of muscular tension, allowing him or her to recognise the sensation and attempt to regulate it as soon as possible. An EMG might be used to treat some disorders when symptoms intensify under stress.
3. **Galvanic skin response training (GSR):** Sensors detect worry by measuring the activity of a person's sweat glands and the quantity of perspiration on the skin. This knowledge may be applied to the treatment of emotional problems such as phobias, anxiety, and stuttering.
4. **Temperature biofeedback:** Skin temperature is measured using sensors affixed to fingers or feet. Because body temperature decreases when stressed, a low measurement may trigger a person to begin relaxing practices. Temperature biofeedback may aid in the treatment of some circulatory illnesses, such as Raynaud's disease, as well as the reduction of migraine frequency.
5. Biofeedback treatment employs a variety of relaxation activities, including:
    i. Deep breathing
    ii. Progressive muscle relaxation – contracting and then relaxing various muscle groups alternatively
    iii. Guided imagery is focusing your attention on a specific picture (such as the color and texture of an orange) in order to concentrate your thoughts and help you feel calmer.
    iv. Mindfulness meditation entails concentrating your thoughts and letting go of unpleasant emotions.

Biofeedback Therapy Process

Training in biofeedback can be done at physical therapy clinics, medical institutes, and hospitals. A biofeedback session typically lasts 30 to 60 minutes. Typically, you will begin to feel biofeedback effects within 10 sessions or fewer. Some illnesses, such as high blood pressure, might benefit from 20 or more sessions. The cost varies depending on whether a person's insurance covers the entire treatment or only a portion of it. Different doctors or health care facilities may charge different fees.

A therapist applies electrical sensors to various places of a patient's body during a biofeedback session. These sensors will monitor a person's physiological response to stress, such as muscular contraction during a tension headache, and give the information back to them via audio (hearing) and visual (seeing) signals. These indications might be a buzzer sound or a flashing light. With this information, a person may learn to correlate the body's reaction with certain bodily activities, such as muscular tensing.

The next stage is to learn how to induce good physical changes in the body, such as relaxing certain muscles when the body is stressed physically or emotionally. The objective of biofeedback is to ultimately be able to create these reactions without the use of technology, outside of the therapist's office.

Benefits of Biofeedback Therapy

Biofeedback has been demonstrated to be beneficial in the treatment of a wide range of medical disorders. Because of the lack of adverse effects, some people choose biofeedback to medicines. The following are some conditions that may benefit from biofeedback.

1. **Chronic pain –** Biofeedback may help decrease the discomfort of diseases such as low back pain, abdominal pain, temporomandibular joint disorders (TMJ), and fibromyalgia by assisting you in identifying tight muscles and then learning to relax those muscles. Biofeedback can help people of all ages, from children to the elderly, with pain reduction.
2. **Headaches –** One of the most well-studied biofeedback applications is headache relief. Muscle tension and stress may both cause migraines and other forms of headaches, as well as exacerbate headache symptoms. There is strong evidence that biofeedback therapy can help to relax muscles and relieve tension, hence reducing the frequency and intensity of headaches. When paired with drugs, biofeedback appears to be very useful for headaches.
3. **Anxiety –** One of the most prevalent applications of biofeedback is anxiety reduction. When you use biofeedback, you might become more aware of your body's responses when you are worried or nervous. Then you'll be able to learn how to manage such reactions.
4. **Urinary Incontinence –** People who struggle to control their need to use the restroom may benefit from biofeedback treatment. Biofeedback can assist women in locating and strengthening the pelvic floor muscles that regulate bladder emptying. Women with incontinence may be able to minimize their urgent need to urinate as well as the number of accidents they have after many sessions of biofeedback. Children who wet the bed, as well as those suffering from fecal incontinence, can benefit from biofeedback (the inability to control bowel movements). Biofeedback does not have the same adverse effects as medicines used to cure incontinence.
5. **High Blood Pressure –** The research on the utility of biofeedback for high blood pressure is conflicting. Although the approach appears to somewhat reduce blood pressure, it is not as successful as medicine for blood pressure control.

Multi-Behavioral Therapy

Multi-Behavior therapy system is a combination of **Aphrotonea (sex therapy), Electro-sleep, Brain Polariser & Aversion Therapy** in a single unit i.e., 4 in 1 model. All parameters can be used simultaneously. It is a **compact** and light **weight unit** which is **reliable** and very **economical**.

Aphrotonea (Sex Therapy)

i. For Erectile Dysfunction due to psychological causes in male and for Arousal disorder problem in females.
ii. Male and Female electrodes in vibrating mode
iii. Vibrating intensity is variable

Electro Sleep

i. Intensity: 0 to 30 v Frequency: 40 Hz
ii. Useful for Insomnia, Anxiety, Tension and Migraine problems
iii. Two electrodes on forehead and one at rear central with velcro tape
iv. Patient feels ting-ling nominus over forehead which helps him/her to sleep
v. Each session duration is 40-60 minutes

Brain Polarizer

i. Useful in Depression even where Electroconvulsive Therapy (ECT) and drugs fail
ii. Two electrodes on forehead & one at right sole, fixed with velcro tape
iii. Intensity: 0 to 10 V

Aversion Therapy

i. Useful in de-addiction
ii. Treatment through remote switch
iii. Intensity: 0 to 100 V to avert from sight, smell and taste of alcohol.

Benefits of MBT

1. Boosting Learning
2. Boosting Attention
3. Improving Creativity
4. Improving Speech
5. Addiction Recovery
6. Anxiety Relief
7. Relax, Lower Attention
8. Depression Control
9. Reducing Pain, Migraine
10. Enhancing Motor Ability
11. Stroke Recovery
12. Parkinson's Disease
13. Alzheimer's disease

Conceptual basis

The use of psychotropic medicines in conjunction with psychotherapy is becoming more common. Some practitioners refer to the combined approach *as pharmacotherapy-oriented psychotherapy*. Anxiety-reducing medications improve cognitive understanding in persons suffering from anxiety disorders. Individual psychotherapy and pharmaceutical treatment are provided by the psychiatrist in *one-on-one therapy*. *Multi-person therapy* is a form of treatment in which one therapist (psychiatrist, psychologist or social worker) conducts therapy and while the other the other therapist (a psychiatrist) prescribes medicines. Some patients divide their transference between the two therapists; one may be viewed as caring and nurturing, while the other may be withholding and distant. Therapy can be hampered by

countertransference concerns, such as one therapist connecting with the patient's idealised or devalued picture of the other therapist. A therapist may be concerned about the quality of the psychopharmacology or believe that the current regimen should be reassessed. Some individuals may be taking a variety of drugs. The treatment psychiatrist's or another clinician's orientation might have an impact on the therapeutic process. Some people are predisposed and trained to perform a certain type of psychotherapy. Psychotherapy is viewed as a supplement to medicine by a psycho-pharmacologically oriented psychiatrist. The psychiatrist must be competent to recognise and treat undesirable effects. Therapists who are sceptical of the efficacy of psychotherapy or who misinterpret the patient's motives may prescribe drugs. Some people with anxiety disorders may have a single benzodiazepine pill on hand to use if they suspect they are going to experience an anxiety attack. Patients who have been weaned from medicine frequently take a tablet with them for comfort. Transference cure or flight into health, in which the patient feels better in an unconscious attempt to satisfy the prescribing physician's imagined expectations, should be considered by therapists. The degree to which a patient follows the suggestions of the treating physician is referred to as compliance. Medication noncompliance may provide the psychiatrist with the first clue that a negative transference is present in an otherwise compliant patient. The psychiatrist's clear and honest explanation of how long the patient should take the drug helps the patient adjust to the idea of chronic maintenance medication if that is the treatment plan. The psychiatrist may appropriately give the patient increasing responsibility for adjusting the medications as the treatment progresses. Research on drug effects by attribution theorists has shown that, when patients take medication and their behaviours change, they attribute it to the drug and not to within themselves. (Sadock et al., *Synopsis Psychiatry* 2018)

Aims and Hypothesis

Aim: Comparison between the anxiety level pre- and post-intervention.

Hypothesis: It is hypothesized that the anxiety levels of patients from group 1 will be much lower than the patients from group 2 post intervention.

METHODOLOGY

Sample

The participants were 60 patients who were referred for intervention services as part of their therapy at a Neuropsychiatric and Psychiatric Clinic owing to concerns about behavioural and emotional issues. This study's inclusion criteria were as follows: be a psychiatric patient receiving current treatment for anxiety disorder at the stated clinic; be between the ages of 18 and 50; be physically healthy; and be free of any diagnoses of psychotic or drug addiction disorders. The data utilised in this study were gathered while the individuals were undergoing therapy. There were 38 males and 22 females among the participants. Group 1 consists of 20 males and 10 females who have received pharmacological intervention. Group 2 included 18 males and 12 females who received a combination of medication and cognitive-behavioral therapy as an intervention strategy. *Table 1* presents demographic and disease characteristics of the patient diagnosed with the disorder. The participants' mean age was 29.27 (standard deviation= 6.5). The mean age of Group 1 members is 30.3 (SD = 6.2). The mean age of Group 2 members is 28.2 (SD = 6.8). An examination of the demographic factors revealed that the majority of the participants had Generalised Anxiety Disorder (27%), Obsessive-Compulsive Disorder (25%), Panic Disorder (13%), Illness Anxiety Disorder or Hypochondriasis (12%), Post-Traumatic Stress Disorder (8%), Agoraphobia (8%), Social Anxiety (5%), and Specific Phobia – Claustrophobia (2 percent). Each patient in Group 2

receives eight sessions at minimum. The SES makeup of the participants, as shown by the greatest degree of education attained by the patients, suggested that the majority had some post-secondary education (75 percent).

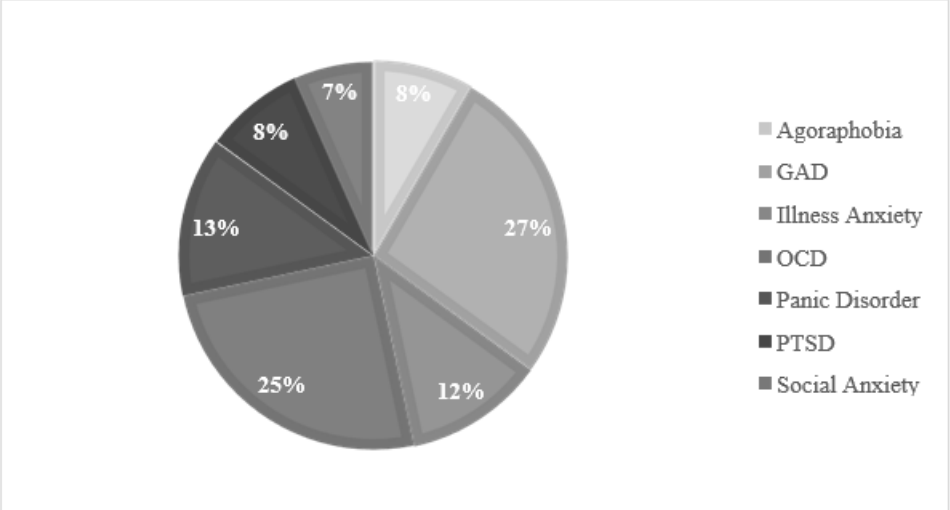

Table 2: Demographic Details of participants

Details	**Group 1**		**Group 2**		**Total**	
Frequency		**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Age (Yrs)						
18 – 30	19	63.3	22	73.3	41	68.3
31 – 40	8	26.6	6	20	14	23.3
41 – 50	3	10	2	6.7	5	8.4
Gender						
Male	20	66.7	18	60	38	63.3
Female	10	33.3	12	40	22	36.7
Marital Status						
Married	26	86.7	19	63.3	45	75
Unmarried	4	13.3	11	36.7	15	25
Diagnosis						
Agoraphobia	3	10	2	7	5	8
GAD	7	23	9	30	16	27
Illness Anxiety	4	14	3	10	7	12
OCD	7	23	8	27	15	25
Panic Disorder	4	13	4	13	8	13
PTSD	3	10	2	7	5	8
Social Anxiety	2	7	2	7	4	7
SES						
High SchoolSecondary	6	20	12	40	18	30
Degree	24	80	18	60	42	70

Note: Group 1 represents patients who have received pharmacological intervention.
Group 2 represents patients who received a pharmacotherapy-oriented psychotherapy as an intervention strategy.
SES – Socio-economic Status (here, highest educational qualification)

Procedure

Patients were referred by Psychiatric Clinic to participate in the group intervention.

Patients were screened for inclusion criteria and were informed about the research intervention group and asked for consent to use the complete treatment file for the study in the presence of a professional. Patients who met inclusion criteria and consented to participation completed a couple of questionnaires. The questionnaire contained questions to obtain demographic information, mental status and questionnaires to assess for symptoms of anxiety and internalizing behaviors, externalizing behaviors, psychotic symptoms, substance abuse, developmental problems, and neuropsychiatric problems. Reading assistance was provided as appropriate. Each patient received a unique identification number and to ensure confidentiality, this number was used on all questionnaires and data.

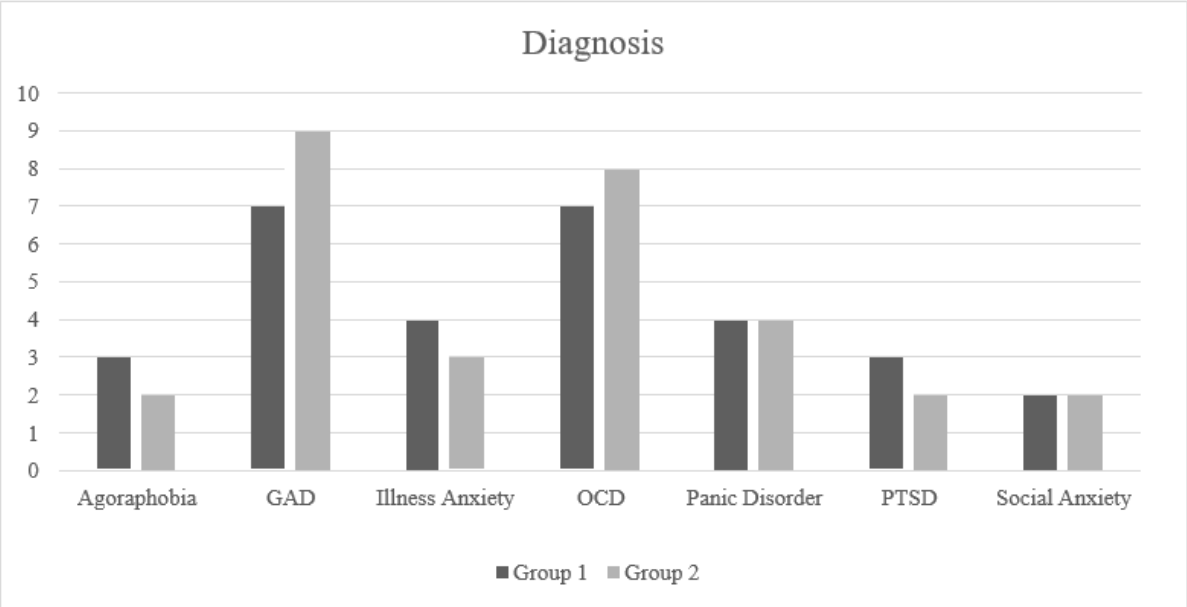

Figure 4 Patients' Diagnosis for Various Anxiety Disorders based on the Clinical Assessment

Table 3: Continuum of the intervention method

Session No.	Procedure
Session 1	Psychoeducation & Goal Setting
Session 2	Abdominal Breathing & Guided Imagery + Biofeedback (GSR) + Homework (Automatic thought record and exercise practice) / Family Counselling (in case of OCD)
Session 3	Progressive Relaxation (Session 1: Hands, Arms, Face, Neck and Shoulders) + MBT + Homework (Automatic thought record and exercise practice)
Session 4	Cognitive Restructuring + Biofeedback (GSR) + Homework (Automatic thought record and exercise practice) / Exposure therapy (in case of OCD, Agoraphobia and Specific Phobia) + Homework (Automatic thought record and exercise practice)

Session No.	Procedure
Session 5	Progressive Relaxation (Session 2: back, chest, stomach, breathing, hips, legs and feet) + MBT + Homework (Automatic thought record and exercisepractice)
Session 6	Catharsis + Mindfulness + Biofeedback (GSR) and/or Exposure Therapy (in case of OCD, Agoraphobia, and Specific Phobia)
Session 7	Modeling + MBT + Homework (Automatic thought record and exercise practice)
Session 8	Re-evaluation + Planning for further sessions if required

Tools

Psychometric Measures used to record data

Beck's Anxiety Inventory

The **Beck's Anxiety Inventory** is a scale that is used to assess the intensity of anxiety symptoms. Aaron T Beck, MD created the scale (Beck et al., 1990; Steer and Beck, 1997). The BAI has 21 self-report elements (Beck et al., 1996b). The items reflect anxiety symptoms such as numbness or tingling, feeling hot, wobbliness in legs, ability to relax, fear of the worst happening, dizziness or lightheadedness, pounding or racing heart, unsteadiness, feeling terrified, nervous, choking, hands trembling, feeling shaky, fear of losing control, difficulty breathing, fear of dying, feeling scared, indigestion or abdominal discomfort, faintness, face flushing, and sweating.

Each item gives the patient four options ranging from no symptom to severe symptom.
For each item, the patient is asked to describe how he or she felt in the previous week. The items are assigned a score of 0, 1, 2, or 3. The scale runs from 0 to 63. A total score of 0–7 is regarded the lowest range, 8–15 is considered mild, 16–25 is considered moderate, and 26–63 is considered severe. To follow the progression or improvement of the anxiety, the BAI can be given to the same patient in future sessions.

The exam is intended for persons aged 17 and up to self-report. As a result of its ability to distinguish between anxious and non-anxious diagnostic groups, the BAI is valuable as a screening tool for anxiety. The coefficient of dependability is 0.92. The reliability of test–retest is 0.75. The BAI had substantial correlations with a variety of self-report and clinician-rated measures (e.g., Spearman rank correlation coefficient (rs) > 0.50). (Halfaker et al., *Psychological Aspects of Pain* 2021)

Psychometric Measures for diagnosis

Mini-mental examination

In older individuals, the Mini-mental state examination is used to assess cognitive decline. It may be used to screen for cognitive impairment, quantify the degree of cognitive impairment at a specific moment in time, monitor the course of cognitive changes in an individual over time, and document an individual's response to therapy, according to Folstein et al. It examines many aspects of cognitive status such as attention, language, memory, orientation, and visuospatial ability. It has also been suggested for the evaluation of cognition in depressed people. The patented mini-mental state evaluation takes around 10-15 minutes to administer. According to the findings, as compared to patients with ischemic vascular dementia and

Parkinson's disease, participants with Alzheimer's disease displayed considerable deterioration on the Mini-mental state examination index evaluating orientation and memory. The ischemic vascular dementia and Parkinson's disease groups fared considerably worse than the AD patients on the Assessing working memory and motor/constructional abilities. It should not, however, be used only to diagnose or distinguish between different kinds of dementia. The Mini-mental State Examination is graded on a scale of 0-30, with results greater than 25 indicating normal cognitive functioning.

- 0-17 for severe cognitive impairment
- Mild cognitive impairment: 18-23
- 24-30 with no cognitive impairment

The interpretation of the mental status assessment must consider the patient's native language, education level, and culture, since these factors might influence performance. The MMSE exhibited a sensitivity of 88.3 percent (95 percent CI, 81.3 percent to 92.9 percent) and a specificity of 86.2 percent (95 percent CI, 81.8 percent to 89.7 percent) for dementia in 14 trials, with a score cutoff of 23 to 25 suggesting substantial impairment. A more recent meta-analysis of 108 cohort studies discovered a sensitivity of 81 percent (95 percent confidence interval, 78 percent to 84 percent) and a specificity of 89 percent (95 percent CI, 87 percent to 91 percent). (Ajeyalemi, *Mini-Mental Examination* 2021)

Hamilton's Anxiety Rating Scale

The HAM-A was one of the first rating scales established to assess the intensity of anxiety symptoms, and it is still frequently used in clinical and research contexts today. The scale is made up of 14 items, each of which is characterised by a set of symptoms, and it assesses both psychic worry (mental agitation and psychological discomfort) and somatic anxiety (physical complaints related to anxiety). Although the HAM-A is still extensively used as a clinical trial outcome measure, it has been criticised for its often-inadequate capacity to distinguish between anxiolytic and antidepressant effects, as well as somatic anxiety vs somatic side effects. There are no standardised probing questions on the HAM-A. Despite this, the scale's indicated levels of interrater reliability appear to be satisfactory. Each item is rated from 0 (not present) to 4 (severe), for a total score range of 0–56, with 17 indicating mild severity, 18–24 mild to moderate severity, and 25–30 moderate to severe. *(Hamilton Anxiety Rating Scale (HAM-A) 2021)*

Hamilton's Depression Rating Scale

The most commonly used clinician-administered depression evaluation scale is the HDRS (also known as the Ham-D). The original version has 17 items (HDRS17) referring to depressive symptoms encountered in the previous week. Although the scale was meant to be completed following an unstructured clinical interview, semi-structured interview instructions are now available. The HDRS was designed with hospital inpatients in mind, hence the emphasis on melancholy and somatic symptoms of depression. A subsequent 21-item version (HDRS21) contained four questions meant to subtype depression but are frequently wrongly used to rate severity. The HDRS has a drawback in that it does not detect unusual symptoms of depression (e.g., hypersomnia, hyperphagia). The scoring method differs depending on the version. A score of 0–7 on the HDRS17 is considered normal, whereas a score of 20 or more is normally necessary for inclusion into a clinical study. (Rohan et al., *A Protocol for the Hamilton Rating Scale for Depression: Item Scoring Rules, Rater Training, and Outcome Accuracy with Data on its Application in a Clinical Trial 2021*)

Brief Psychiatric Rating Scale

The BPRS (version 4.0) is a 24-item questionnaire that examines 24 mental symptoms. The presence and severity of mental symptoms were assessed using a Likert scale ranging from 1 (not present) to 7 (very severe) (extremely severe). As a result, potential values range from 24 to 168, with lower levels suggesting milder psychopathology. (Zanello et al., *The Brief Psychiatric Rating Scale (version 4.0) factorial structure and its sensitivity in the treatment of outpatients with unipolar depression 2021*)

Patient Health Questionnaire – 9

The Patient Health Questionnaire (PHQ) is a self-administered version of the PRIME-MD diagnostic instrument for common mental disorders. The PHQ-9 is the depression module, which scores each of the 9 DSM-IV criteria as "0" (not at all) to "3" (nearly every day) the score can range from 0 to 27. (Kroenke et al., *The PHQ-9: Validity of a Brief Depression Severity Measure 2021*)

Sack's Sentence Completion Test

The sentence completion test (SCT) is a semi-structured projective technique used by clinical psychologists and other professionals who work with children and adolescents and need to explore their clients' needs, inner conflicts, fantasies, sentiments, attitudes, aspirations, and adjustment difficulties. Conflicts with parents, family, toward heterosexual relationships, with elders, with instructors, with parents, with women, and with oneself developed on SCT. (Kohli et al., *The utility of modified version of sentence completion test for children and adolescents 2021*)

Yale-Brown Obsessive Compulsive Scale (Y-BOCS)

The Yale-Brown Obsessive Compulsive Scale (Y-BOCS) is a 10-item scale used to assess the degree and type of symptoms experienced by patients suffering from obsessive-compulsive disorder (OCD) in the previous seven days. Obsessions and compulsions are among the symptoms evaluated. This scale is useful for recording OCD symptoms before, during, and after therapy. Goodman et al. (1989b) validated this scale by discovering that the Y-BOCS was substantially linked with two independent measures of OCD. The Y-BOCS is similarly responsive to changes in OCD symptoms, according to the same study. The Y-BOCS also has a good level of internal consistency and interrater reliability. The total Y-BOCS score ranges from 0 to 40, with higher values suggesting more severe OCD symptoms. The obsession and compulsion subscales have scores ranging from 0 to 20, however only the overall Y-BOCS score is interpreted. (Goodman et al., 1989a)

The total score may be divided into five groups based on the severity of the symptoms. People who have a total Y-BOCS score:

- Under 7 are likely to be subclinical,
- 8-15 are likely to have a mild case of OCD,
- 16-23 are likely to have a moderate case of OCD,
- 24-31 are likely to have a severe case of OCD,
- 32-40 are likely to have an extreme case of OCD.

Four-Dimensional Symptom Questionnaire

The 4DSQ is a self-report questionnaire with 50 items divided into four scales. The items are phrased as questions that might be asked in ordinary primary care practise. The reference

period is "the previous week." There are no positive affect questions or any "reversed" phrased questions on the 4DSQ. The response categories are also phrased as conventional clinical responses: "no," "occasionally," "frequently," "often," "very often," or "constantly." To calculate scale scores, the replies are scored as 0 for "no," 1 for "sometimes," and 2 for the other response categories, and the item scores are added together. The Distress scale contains 16 items and has a score range of 0–32, the Depression scale contains 6 items and has a range of 0–12, the Anxiety scale contains 12 items and has a range of 0–24, and the Somatization scale contains 16 items and has a range of 0–32. (Terluin et al., *The Four-Dimensional Symptom Questionnaire (4DSQ): a validation study of a multidimensional self-report questionnaire to assess distress, depression, anxiety and somatization 2021*)

PTSD Checklist for DSM-V

The PCL-5 is a 20-item self-report questionnaire that measures the 20 DSM-5 PTSD symptoms. The PCL-5 serves several functions, including:

- Tracking symptom changes during and after therapy
- Screening people for PTSD
- Establishing a tentative PTSD diagnosis

An organised clinical interview, such as the Clinician-Administered PTSD Scale, is the gold standard for diagnosing PTSD (CAPS-5). The PCL-5 can be used to obtain a preliminary PTSD diagnosis when appropriate. PCL for DSM-IV is available in three versions: PCL-M (military), PCL-C (civilian), and PCL-S (specific), which differ somewhat in the instructions and language of the index event phrase. The PCL-5 version is the most comparable to the PCL-S (specified) version. PCL-5 has no comparable PCL-M or PCL-C versions. Although there is only one version of the PCL-5 questions, there are three versions of the PCL-5 measure: one without a Criterion A component, one with a Criterion A component, and one with the Life Events Checklist for DSM-5 (LEC-5) and an expanded Criterion A component. The self-report rating scale is 0-4 for each symptom, reflecting a change from 1-5 in the DSM-IV version. Rating scale descriptors are the same: "Not at all," "A little bit," Moderately," "Quite a bit," and "Extremely." (Weathers, F.W., Litz, B.T., Keane, T.M., Palmieri, P.A., Marx, B.P., & Schnurr, P.P. (2013). The PTSD Checklist for DSM-5)

Millon Clinical Multi-Axial Inventory (MCMI-III)

The MCMI-III assesses the existence of psychiatric illnesses, including personality disorders. The MCMI-III is a 175-question true/false psychological instrument that is used in therapeutic settings with people aged 18 and up.

Draw-a-person Test

This exam, which is based on children's drawings of human beings, may be utilised with two alternative scoring systems for different reasons. The first assesses nonverbal intellect, while the second looks for emotional or behavioural abnormalities. During the 15-minute testing session, the youngster is instructed to draw three figures: a man, a lady, and himself or herself.

The Draw-a-Person: QSS test is used by the test administrator to assess intellect (Quantitative Scoring System). This approach examines fourteen distinct components of the pictures, such as particular body parts and clothes, for criteria such as presence or absence, detail, and proportion. Each drawing has 64 score components in total. Each drawing receives a unique standard score, as well as a total score for all three. The use of a nonverbal, nonthreatening exercise to assess intelligence is intended to reduce potential sources of bias by lowering

characteristics such as native language, verbal skills, communication difficulties, and sensitivity to working under pressure. However, past drawing experience can impact test outcomes, which may explain why middle-class children tend to score higher on this exam than lower-class children, who frequently have fewer opportunity to draw.

Rorschach inkblot test

The Rorschach test, commonly known as the Rorschach inkblot test, is a projective form of psychological assessment in which a person is asked to describe what he or she sees in ten inkblots, some of which are black or grey and others with patches of color. Hermann Rorschach, a Swiss psychiatrist, developed the test in 1921. Its popularity peaked in the 1960s, when it was widely used to measure intellect and personality, as well as to diagnose specific psychiatric problems. Rorschach test responses are normally graded based on the position of the object seen in the blot, the type of stimulus feature highlighted (e.g., shape or color), and the substance of the percept (e.g., animal). The psychologist seeks to define the subject's personality based on reaction scores, frequently by comparing results to established standards. Despite the advent of the Exner scoring system in 1974, which was created to solve shortcomings in the Rorschach test, interpretation of a subject's responses is not particularly consistent. (Britannica, T. Editors of Encyclopaedia *(2020, March 13). Rorschach test. Encyclopedia Britannica.* https://www.britannica.com/science/Rorschach-Test)

Thematic apperception test (TAT)

Thematic apperception test (TAT) is a projective psychological examination created at Harvard University in the 1930s by Henry A. Murray and Christiana D. Morgan. The technique's proponents argue that subjects' replies, in the narratives they make up regarding ambiguous images of people, disclose their underlying intentions, worries, and perspectives on the social environment. Historically, the test has been one of the most commonly investigated, taught, and used procedures of its kind. For TAT scoring systems, internal consistency, a reliability estimate based on how strongly test items correspond to one another, is frequently relatively low. Internal consistency measurements, according to some writers, do not apply to the TAT. Gruber and Kreuzpointner (2013) devised a novel approach for calculating internal consistency that does not rely on images. Both inter-rater and test–retest reliability varies greatly between scoring methodologies. Their technique is a better fit for TAT's basic design principles, and it also attained appropriate Cronbach's alpha values of up to.84. (*Thematic apperception test - Wikipedia 2021*)

Statistical Analysis

Table 4: Paired Samples Test

				95% CI of the difference				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)

Group1_Pretest – Group1_ Posttest	26.767	8.374	1.529	23.640	29.893	17.5	29	0.00
Group2_Pretest – Group2_ Posttest	48.933	6.443	1.176	46.527	51.339	41.6	29	0.00

Table 5: Paired Sample Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	52.27	30	7.05	1.288
	Post-test	24.7	30	6.1	1.114
Pair 2	Pretest	52.47	30	6.5	1.192
	Post-test	3.53	30	2.7	0.491

Table 6: Paired Sample Correlations

		N	Correlation	Sig
Pair 1	Group1_Pretest & Group1_postest	30	0.118	0.534
Pair 2	Group2_Pretest & Group2_postest	30	0.237	0.207

Table 7: 95% CI

Group 1	Group 2
1.939	0.966

DISCUSSION

Result

Based on the research and test findings, the mean of post-test result of anxiety level in patients from group 1 (controlled group) is 25.5 (SD = 5.2) and the mean of post-test of anxiety level in patients from group 2 (experimental group) is 3.5 (SD = 2.7).

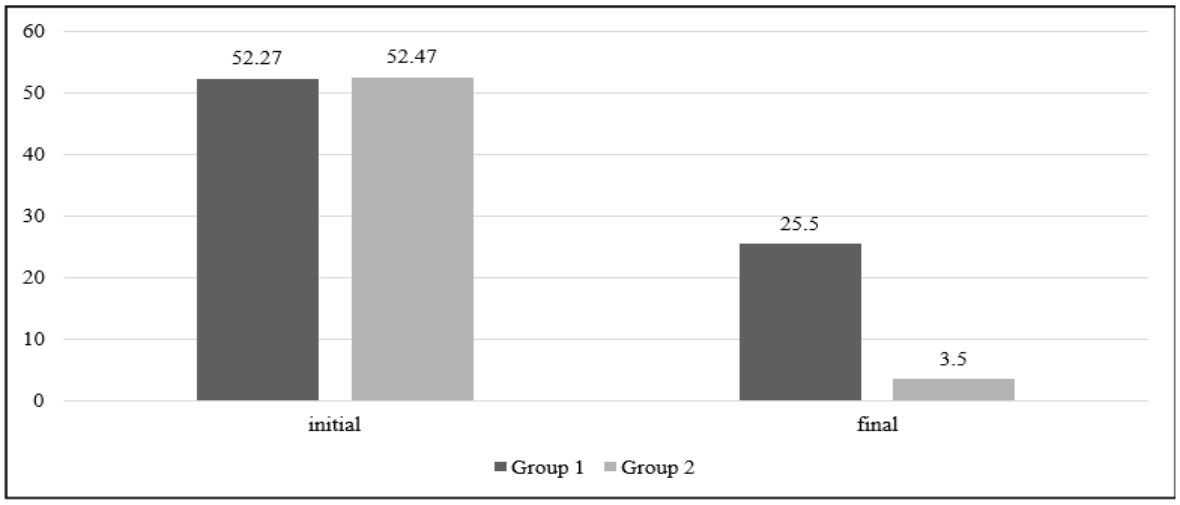

Figure 5 Comparison between the Average Scores of Beck's Anxiety Inventory pre- and post-

Discussion

The initial aim of the study was to compare the effect of pharmacotherapy and psychotherapy-oriented-pharmacotherapy on anxiety disorders. Individuals with a primary diagnosis of Panic Disorder, Social Phobia, Posttraumatic Stress Disorder, Generalized Anxiety Disorder, or obsessive - compulsive disorder who had received eight or more sessions of CBT were

evaluated for symptom severity and improvement prior to starting treatment, as well as at the end of treatment. After the analysis, we found that the differences in effects between psychotherapy and pharmacotherapy were efficacious for all forms of anxiety disorders. We also found evidence that pharmacotherapy was significantly efficacious in cases of illness anxiety disorder, panic disorder and social anxiety disorder, and being the psychosomatic disorders, the long-term effects are seen through CBT.

The most often used and researched CBT strategies are exposure and cognitive procedures. According to previous researches, for some anxiety disorders, such as particular phobias and OCD, the effectiveness of exposure remains generally unquestioned. When compared to the control circumstances, EX/RP had a substantial effect size for OCD. For OCD patients, there are a disproportionately greater number of research studying exposure treatment than cognitive therapy. Studies aimed at finding predictors of favourable treatment outcomes are extremely useful in establishing which elements and patient features are most likely to result in improvements. Despite studies demonstrating that exposure approaches have greater advantages, collective research has not consistently demonstrated that exposure approaches are considerably better than cognitive therapy. In OCD patients, there are a disproportionately greater number of research studying exposure therapy than cognitive therapies. Due to the frequent overlap in approaches utilised in many of these therapies, it is difficult to separate these outcomes. PE for PTSD patients is mostly focused on exposure, but it also incorporates imaginal exposure processing. CBT for PTSD focuses on cognitive beliefs about the trauma's causes and consequences. (Kaczkurkin & Foa, *Cognitive-behavioral therapy for anxiety disorders: an update on the empirical evidence 2021*).

CBT was widely defined as any treatment that involved cognitive, behavioural (e.g., exposure), or a combination of components. These analyses comprised a total of 60 studies: 8 for panic disorder, 4 for social anxiety disorder, 15 for OCD, 16 for GAD, 5 for agoraphobia, 7 for sickness anxiety disorder, and 5 for PTSD. CBT for panic disorder typically consists of education about the nature and physiology of the panic response, cognitive therapy techniques designed to modify catastrophic misinterpretations of panic symptoms and their consequences, and progressive exposure to panic-related body sensations and avoided situations. CBT for GAD includes cognitive treatment to address worry and cognitive biases, relaxation to address tension, and imaginal exposure to catastrophic pictures and stressful events while responding reducing excessively cautious actions. Cognitive behavioural therapy (CBT) for social phobia primarily focuses on cognitive restructuring and in-person exposure to dreaded social settings. Patients are taught to recognise and challenge their beliefs about their social competence and the likelihood of unfavourable social appraisal and repercussions. CBT for PTSD generally consists of psychoeducation regarding the nature of fear, anxiety, and PTSD; controlled, sustained exposure to traumatic event-related stimuli; and cognitive restructuring, processing, or challenging of maladaptive beliefs/appraisals. Exposure and response prevention, as well as cognitive therapies, are components of CBT in the treatment of OCD.

The findings showed that posttreatment success as a responder and remitter was largely maintained. Furthermore, pre- and posttreatment severity, as well as posttreatment improvement ratings, were predictive of maintenance. Furthermore, effect sizes were utilised to evaluate the efficacy of CBT in the current clinical sample to past efficacy studies' treatment results. All pre- test – post-test effect sizes for disorder-specific symptom measures were substantial, suggesting that CBT for adult anxiety disorders is efficacious in clinically relevant

settings. Therefore, CBT is effective for generalised anxiety disorder, panic disorder, post-traumatic stress disorder, obsessive compulsive disorder, social anxiety, agoraphobia, illness anxiety disorder, and specific phobia, according to this review. CBT is as effective as or more effective and appears to have a high long-term efficacy than medicines in treating the aforementioned problems, but it is less widely available.

CONCLUSION

According to research, anxiety disorder sufferers share common psychological and biological vulnerabilities, implying that successful anxiety therapies tap into these shared processes. Research on CBT in anxiety disorders supports the efficacy and effectiveness of these strategies, with the majority of current research supporting the use of giving exposure therapy in the treatment of anxiety disorders. In terms of future approaches, it is clear from this analysis that further research is needed to disassemble successful therapies for anxiety disorders in order to determine which precise components are responsible for favourable outcomes. At the same time, the consistent discovery of similar or near-identical efficacy among CBT approaches shows that the commonalities underlying these treatments may be more essential than any specific distinctions between the procedures. Aside from understanding whether therapies work, it is also critical to determine which patients are most likely to benefit from a certain therapy or component. Studies aimed at finding predictors of favourable treatment outcomes are extremely useful in establishing which elements and patient features are most likely to result in improvements. Finally, there is a growing interest in transdiagnostic CBT techniques that transcend specific diagnoses in recognition of the fact that anxiety disorders are frequently comorbid with each other and with other disorders such as depression, as well as the significant overlap in symptoms between anxiety disorders.

Limitations

1. Since the research was conducted on a sample of 60 patients, hence, it cannot be generalized.
2. The research was conducted in an ongoing pandemic and quarantine situation which increased the levels of anxiety and depression in the population as compared to the normal times, which increases the chance of relapse.
3. The ideal number of sessions for cognitive behavioral therapy is 12-15 sessions but due to lesser span of time, the short-form of Cognitive-Behavioral Therapy, i.e., 8-10 sessions was used.
4. The ideal course for psychiatric medicines is at least 6 months but due to lesser amount of time, the patients were observed for 4 months.
5. There can be cultural, socio-economic and demographic characteristics affecting the results of the research due to the vast diversity in backgrounds of the patients.

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Acknowledgment

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Jain, M. (2023). A Comparison between Effectiveness of Pharmacotherapy and Pharmacotherapy-Oriented- Psychotherapy in Patients with Anxiety Disorders. *International Journal of Indian Psychology, 11(3),* 4823-4856. DIP:18.01.451.2023 1103, DOI:10.25215/1103.451