



# LITERATURE REVIEW ON EVALUATION OF COGNITIVE BEHAVIOR THERAPY ON DEMENTIA PATIENTS

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## **Abstract**

People with a variety of mental health issues can be treated using cognitive behavioral therapy (CBT). The foundation of CBT is the notion that our thoughts (cognition), feelings (emotion), and actions (behavior) are interconnected. More specifically, our thoughts dictate our emotions and actions. Cognitive behavioral therapy, or CBT, is an efficacious treatment approach for a range of mental and emotional health issues, including anxiety and depression. CBT teaches you how to identify and address damaging ideas as well as practical self-help approaches. These strategies will immediately. Improve your quality of life.

CBT Program: 8–12 weekly sessions designed with dementia patients in mind. Stress management strategies, behavioral activation, and cognitive restructuring are all covered in sessions. caregiver participation in the therapeutic process.

**MECHANISM:** A piperidine derivative, donepezil hydrochloride is a fast, reversible, centrally acting acetylcholinesterase inhibitor. After acetylcholine is released from the presynapse, it is broken down by the enzyme acetylcholinesterase. Acetylcholine is more readily available at synapses and cholinergic transmission is improved when donepezil binds reversibly to acetylcholinesterase and inhibits acetylcholine hydrolysis. There is no structural similarity between donepezil and other anticholinesterase medications like tacrine and physostigmine. One possible explanation for the drug's neuroprotective effects is that it upregulates nicotinic receptors in cortical neurons. Reversible suppression of voltage-activated sodium currents as well as delays in rectifier and fast transient potassium currents are also displayed by the medication.

**RESULT** Out of 30 DEMENTIA PATIENTS, 12 Patients deny for the CBT. And out of remaining 18 Patients, 10 have showed improvement in Dementia

## INTRODUCTION

### Dementia

Dementia is a general term for a decline in cognitive abilities that affects a person's ability to perform daily activities <sup>[1,2]</sup>. It is typically linked to issues with thinking, memory, and conduct. Emotional issues, linguistic barriers, and diminished motivation are the most prevalent symptoms, along with memory impairment and disturbance of thought patterns. It is possible to characterize symptoms as ongoing over multiple phases. In the end, dementia has a profound effect on the affected person, carers, and societal interactions in general <sup>[3,4]</sup>. A person must exhibit alterations in their typical mental functioning and a larger degree of cognitive impairment as a result of normal aging in order to be diagnosed with dementia.

An estimated 52% of those 82 years of age and older are thought to have dementia.

When illnesses or viruses damage the brain regions responsible for learning, memory, decision- making, or language, dementia results. Alzheimer's is the most frequent cause of dementia <sup>[5- 7]</sup>.

However, there are further recognized causes of dementia, such as:

- dementia involving blood vessels.
- Lewy bodies and dementia
- dementia frontotemporal
- Dementia mixed.
- Parkinson's disease dementia

#### ❖ different types of dementia <sup>[8]</sup>

- **Alzheimer's disease:** The most prevalent kind of dementia is this one. Amyloid and tau proteins are two aberrant proteins that accumulate in the brain. These proteins cause your brain's nerve cells to stop communicating with one another. As more nerve cells die in other regions, the death of nerve cells spreads from one location. Short-term memory loss, disorientation, and behavioral and personality abnormalities are among the symptoms. Later in the disease, difficulties speaking, recalling distant memories, and walking become problematic. Adults over 65 are primarily affected by Alzheimer's disease; up to 10% of those over 65 and over 50% of those over 85 have the condition. Another significant risk factor is family history. This kind affects between 60% and 80% of dementia patients <sup>[9]</sup>.
- **Vascular dementia:** This kind of dementia is the second most prevalent kind. It is brought on by illnesses including atherosclerosis and strokes, which obstruct and harm blood arteries in the brain. Memory issues, disorientation, difficulty focusing, and difficulty finishing tasks are some of the symptoms. The deterioration can happen all at once after a large stroke or gradually after several smaller strokes. High blood pressure, diabetes, and high cholesterol are risk factors. Vascular dementia affects 15–25% of people with dementia <sup>[10]</sup>.
- **Lewy body dementia:** This illness is characterized by the accumulation of protein clumps in the nerve cells of your brain, known as Lewy bodies <sup>[11]</sup>. Nerve cells are harmed by lewy bodies <sup>[12]</sup>. Movement and

balance issues altered sleep patterns, memory loss, trouble with planning and problem-solving, and visual hallucinations and delusions are among the symptoms. Lewy Body dementia accounts for 5% to 10% of dementia cases <sup>[13]</sup>.

- **Frontotemporal dementia (FTD):** Damage to the brain's frontal and temporal lobes results in frontotemporal dementia (FTD). The buildup of aberrant proteins in these regions is what is causing this damage <sup>[14]</sup>. This results in alterations in social behavior, personality, and/or linguistic abilities (speaking, comprehending, and forgetting common word meanings) as well as motor coordination. FTD is a prevalent form of early-stage dementia that often affects individuals in the 45–64 age range. Five to six percent of cases of dementia are FTD <sup>[15,16]</sup>.

- **Mixed dementia:** a dementia that combines two or more different forms. The most typical combination is vascular dementia and Alzheimer's disease. The majority of those who experience it are above 80 years old. The diagnosis is frequently challenging because dementia symptoms <sup>[17,18]</sup> can be more pronounced or because several symptoms from the two conditions can coexist. Individuals who suffer from mixed dementia degrade more quickly than those who only have one kind of dementia.

- **CAUSES OF DEMENTIA**

Brain injury is the root cause of dementia. The brain's nerve cells are impacted by dementia, which limits their capacity to communicate with other parts of the brain. Dementia may also result from a obstruction of the brain's blood supply, depriving it of the nutrition and oxygen it requires. Brain tissue dies in the absence of nutrition and oxygen. The symptoms of brain damage differ according to the part of the brain that is impacted. Certain dementias worsen over time and are irreversible. Other brain disorders are the cause of other dementias. The symptoms of dementia might also be brought on by another category of medical issues. Dementia symptoms can be reversed, and many of these illnesses are curable.

Other causes of dementia include:

**Huntington's disease:** Huntington's disease: A single defective gene causes this brain disorder <sup>[19]</sup>. The disease causes the destruction of nerve cells in the brain, causing problems not only in controlling body movements, but also in thinking, decision-making, memory, and changes in personality.

**Parkinson's disease:** Many people develop dementia in the later stages of Parkinson's disease. Symptoms include thinking and memory disturbances <sup>[20]</sup>, hallucinations and delusions, depression, and language disorders.

**Traumatic brain injury:** Repeated blows to the head can cause this injury. It is most commonly seen in football players, boxers, soldiers, and people who have been in a car accident. Symptoms of dementia that appear years later include memory loss, behavioral and mood changes, slurred speech, and headaches <sup>[21]</sup>.

- **Symptoms of Dementia** <sup>[22]</sup> :-

Early symptoms of dementia include:

1. Forgetting current events and information
2. Comments or questions that are repeated within a very short period of time.

3. Frequently used items are placed incorrectly or in unusual locations.
4. Season, year, and month are unknown.
5. It is hard to find the right words.
6. Experiencing changes in mood, behavior, or interests.

### CBT combines cognitive therapy and behaviour therapy

- **Cognitive therapy**

Changing your perspective on a problem that's bothering you is the goal of cognitive therapy. Negative thinking leads to negative emotions and actions<sup>[54,55]</sup>. For instance, a person who feels undeserving of respect or love may act bashfully and retreat from social interactions. Cognitive therapy disproves those ideas and gives you more constructive coping mechanisms. There are numerous methods at one's disposal. One tactic is to push you to produce proof to 'prove' that you are unlovable. One way to do this might be to encourage you to thank your loved ones and friends for their support and affection<sup>[56-59]</sup>. You can see that your belief is incorrect with the help of this evidence. We refer to this as "cognitive restructuring." You acquire the ability to recognize, confront, and swap pessimistic ideas with more pragmatic and optimistic ones.

- *Behaviour therapy*

The purpose of behavior therapy is to teach you how to alter your behavior<sup>[60-62]</sup>.

Behavioral Therapy: Behaviorism views psychiatric illnesses as the outcome of learning that is not adaptive, given that individuals are born with a blank slate. They don't believe that a single underlying cause can be represented by a collection of symptoms. Behaviorism makes the assumption that all conduct is learned by the surroundings and that operant and classical conditioning are the methods used to acquire symptoms.

The majority of phobias are typically the result of classical conditioning, which teaches us by association. Operant conditioning, which teaches through rewards and punishments, can explain anomalous behavior, including eating disorders.

### **Therapies:**

Classical conditioning theory forms the basis of behavioral therapy. The idea is that all behavior is learned, and abnormal behavior results from improper learning, or conditioning. As a result, the person needs to understand what constitutes appropriate behavior. Focusing on present issues and behaviors as well as efforts to change problematic behavior that the patient finds upsetting are key components of behavioral therapy.

### PLAN OF WORK

General CBT Assumptions:

- The cognitive perspective holds that incorrect beliefs about other people, our environment, and ourselves are the root cause of abnormality. Cognitive defects, such as poor planning, or cognitive distortions,



such as incorrect information processing, may be the cause of this flawed thinking.

- Our perceptions are distorted as a result of these cognitions; Ellis proposed that this is caused by illogical thinking, whereas Beck put forth the cognitive triad.

It is through our mental images of the environment that we interact with it. We can experience disorders in our emotions and behavior if our mental models are false or if our reasoning skills are not strong enough. Through an assessment procedure, the cognitive therapist teaches clients how to recognize distorted cognitions. The customers get the ability to distinguish between reality and their own ideas. They are trained to identify, observe, and keep an eye on their own thoughts as well as the impact that cognition has on their. As part of the behavior modification component of therapy, the client is given homework assignments, such as journaling their thoughts. The client is given assignments by the therapist to assist them confront their own illogical views.

The concept is for the customer to recognize their own harmful beliefs and then disprove them. Consequently, their beliefs start to shift. For instance, a homework assignment to meet a friend for a drink at the pub could be given to someone who finds social situations stressful.

### **Strengths of CBT**

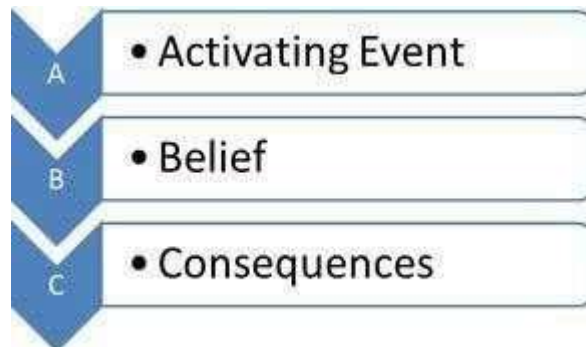
1. Model's emphasis on human thought makes it very appealing. The same cognitive capacities that have enabled us to achieve so much may also be to blame for our current woes.
2. Theories of cognition are amenable to testing. According to Rimm and Litvak (1969), when participants in experiments are coerced into accepting uncomfortable beliefs or assumptions, their anxiety and depression increase.
3. It has been discovered that many sufferers of psychological problems, in particular those with depressive, anxiety, and sexual disorders, exhibit unhelpful presumptions and ideas (Beck et al., 1983).

### **Limitations of CBT**

1. The exact function of cognitive processes is still unknown. It is unclear if psychopathology results from flawed cognitions or if they are the cause of it. When Lewinsohn (1981) examined a group of people before any of them developed depression, he discovered that those who subsequently experienced depression had no higher likelihood of thinking negatively than those who did not. This implies that sadness might not be the source of hopelessness and negative thinking, but rather its outcome.
2. The breadth of the cognitive model is limited; wider problems must be addressed because thinking is only one aspect of human functioning.
3. Ethical considerations: RET is a directive treatment meant to alter cognitions, occasionally with considerable power.

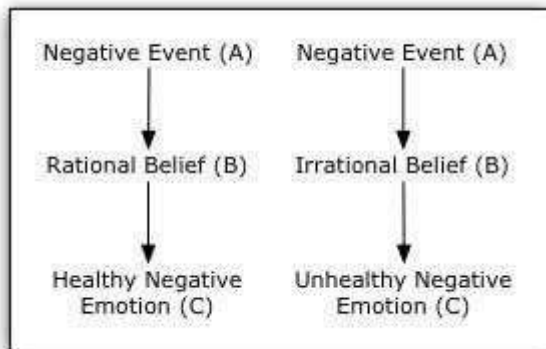
**Discussion :****The ABC Model**

Albert Ellis (1957) presented the ABC Technique of Irrational Beliefs as a significant tool in cognitive therapy. Using a three-column table, the first three steps examine the process by which an individual came to hold illogical views.



- \* **A :** Activating Event or objective circumstance. The occurrence that finally triggers a strong emotional reaction or unfavorable, dysfunctional thought is documented in the first column as the objective situation.
- \* **B:** Perceptions. The customer records any unfavorable thoughts that came to them in column 2.
- \* **C - Consequence.** The ensuing dysfunctional actions and unpleasant emotions are listed in the third column. Between the situation and the upsetting emotions, the negative ideas in the second column are perceived as a link. The customer describes feelings or unfavorable ideas that they believe are brought on by column A in order to explain the third column, C. Anger, sadness, worry, etc. could be this.

Ellis argues that an individual's irrational belief system (B) contributes to the negative emotional and behavioral repercussions (C) rather than the triggering event (A) because the latter is interpreted unreasonably.



### REBT Example

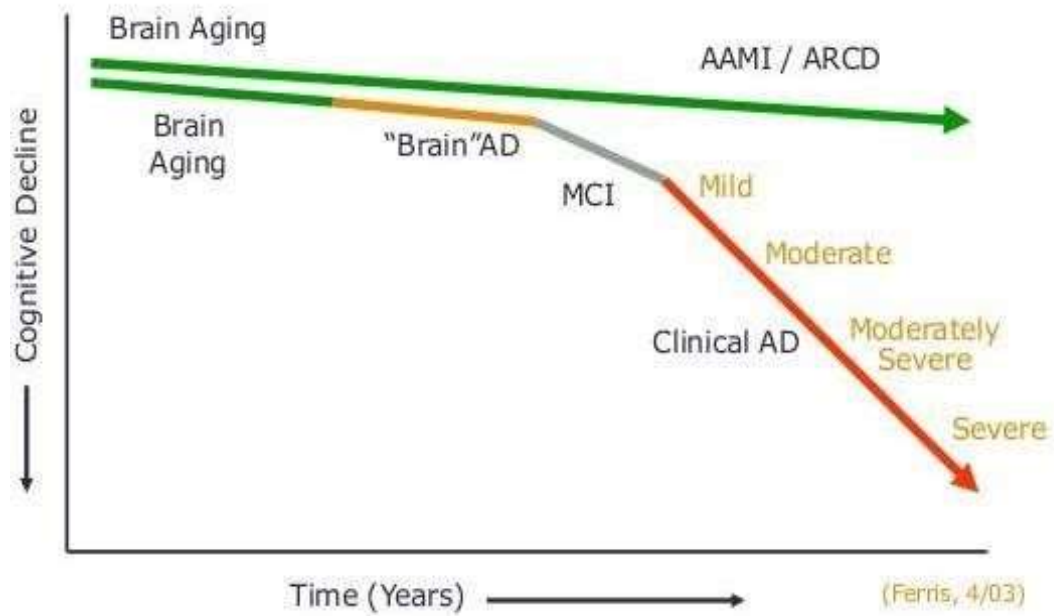
Gina is disappointed with herself for receiving a bad grade on a math test. She failed her test, which is the activating event (A). The belief, B, is that she is nothing unless she gets good grades. Gina experiences depression, which is the Consequence (C). Following the identification of irrational beliefs, the therapist will frequently collaborate with the client to reframe—that is, to reinterpret—the negative views in light of evidence from the client's experience. This aids in the client's development of more sensible beliefs and constructive coping mechanisms.

Gina would learn from a therapist that there is no proof that getting bad grades is terrible or that she needs to have good scores in order to be valued. Although it would be nice to get good grades, she still feels that it doesn't make her unworthy. She will feel angry or upset but not depressed if she understands that receiving poor grades is unpleasant but not terrible and that it does not mean she is a bad person—she is just weak at arithmetic or studying right now. She might start studying more diligently after that because her dissatisfaction and grief are probably normal negative feelings.

### Critical Evaluation

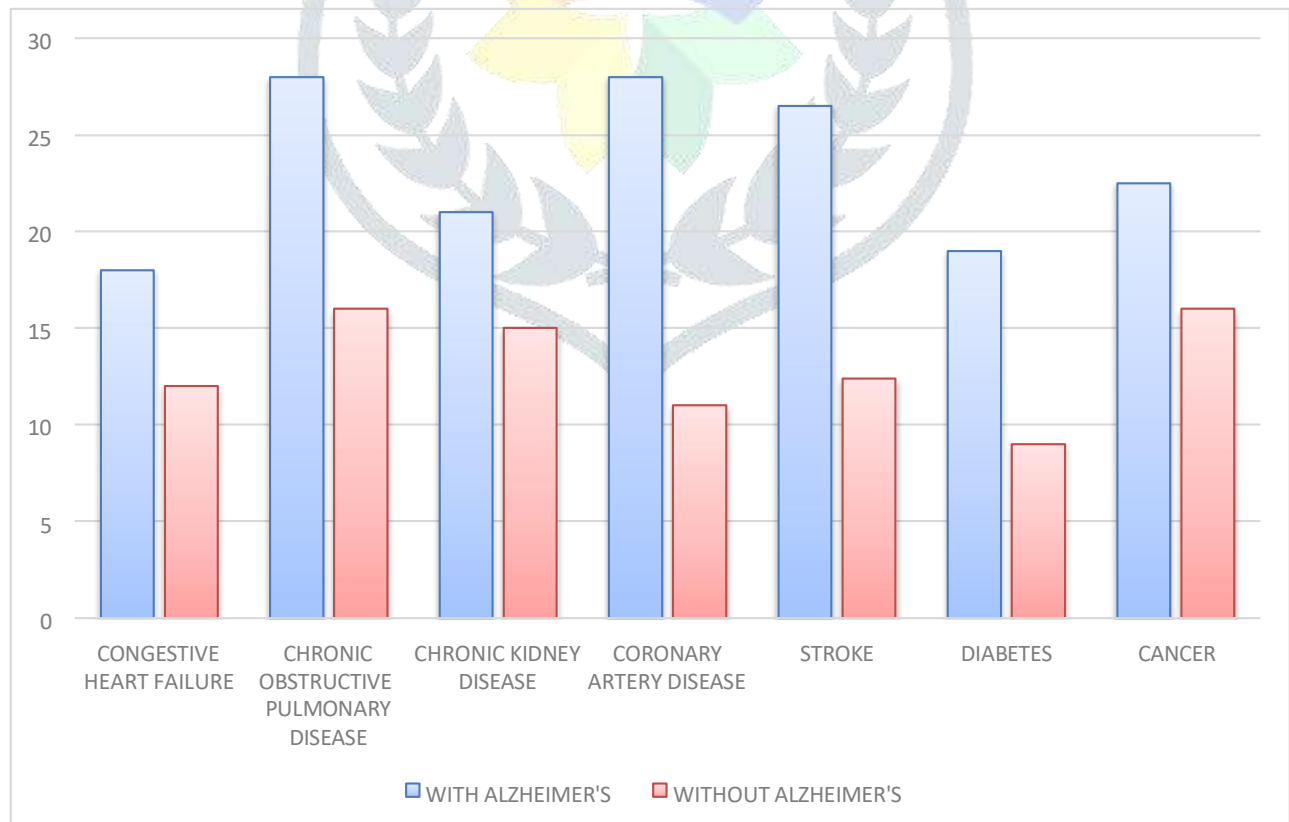
Numerous research have been mentioned by therapists who use rational emotive behavior to support their method. The majority of early research involved participants with non-clinical conditions like a slight fear of snakes or phobias that were created by experimentation (Kendall & Kriss, 1983). However, rational emotive behavior therapy, or REBT, has also been proven to be frequently beneficial in a number of recent investigations conducted on real clinical participants

## COURSE OF AGING, MCI AND AD



AAMI: age-associated memory impairment    ARCD: age-related cognitive decline

### AFFECTED PERSON ARE MORE PRONE TO OTHER CO-MORBIDITIES





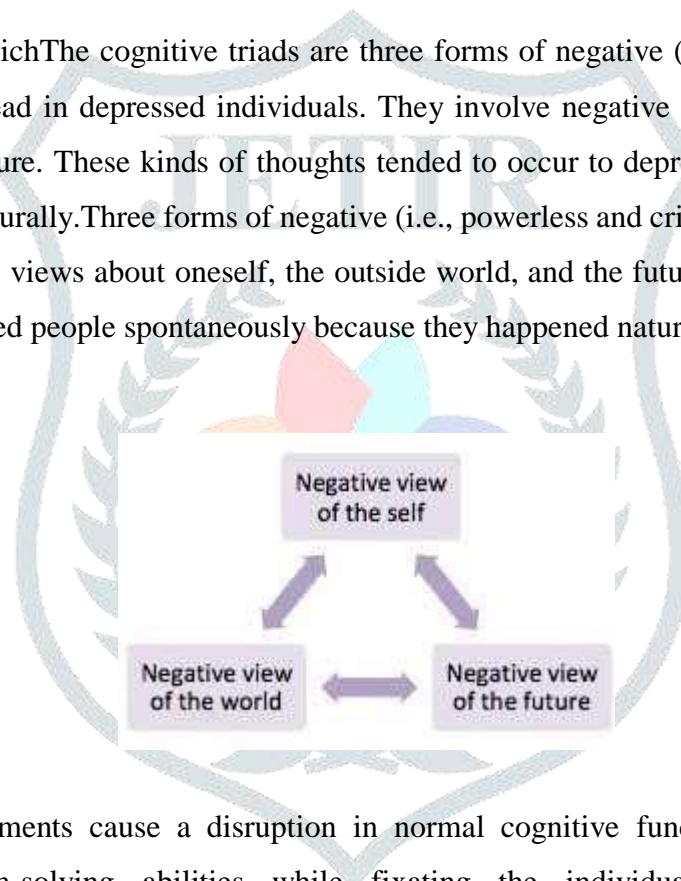
are connected by the negative ideas in the second column. The client's feelings or unfavorable ideas that they believe are brought on by A are next described in order to explain the third column C. This could be sadness, fear, rage, etc.

### The Cognitive Triad

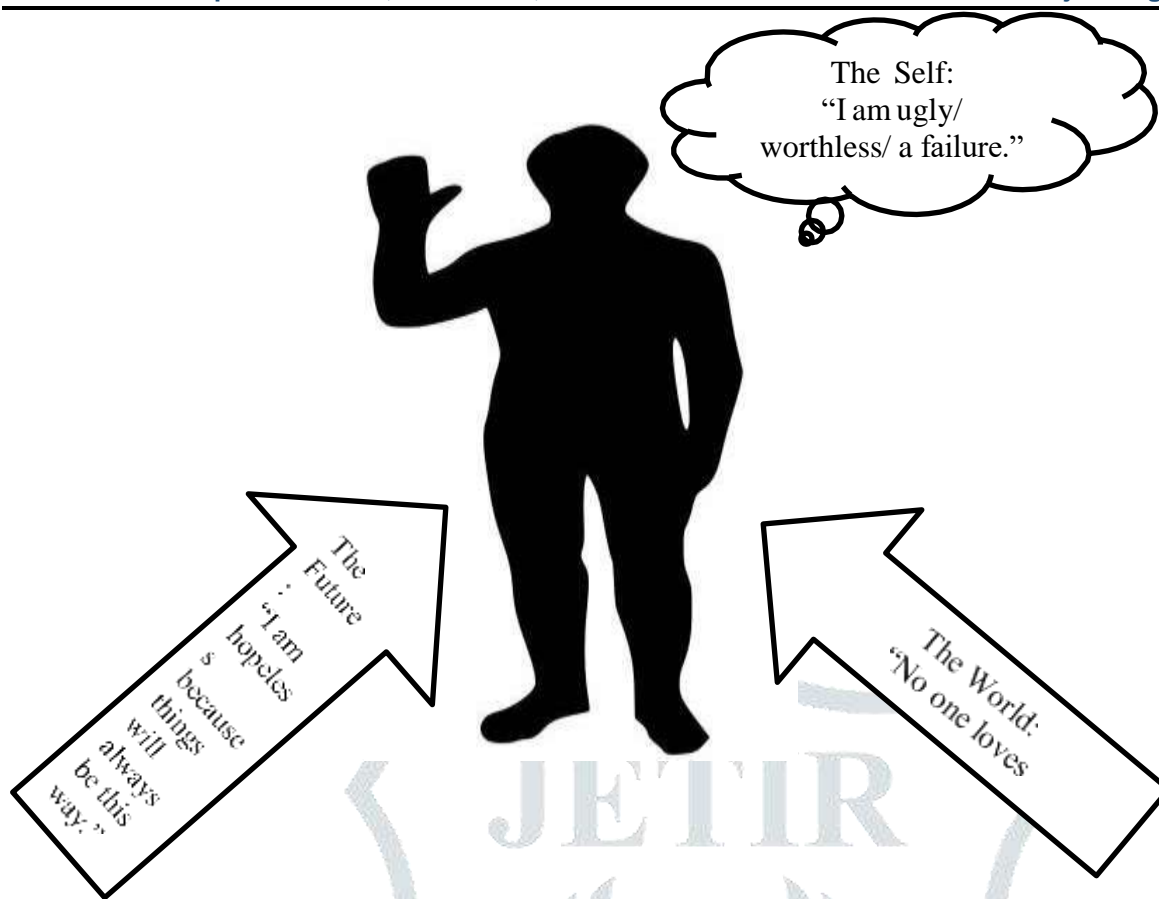
Depressive individuals frequently exhibit three forms of negative (i.e., powerless and critical) thinking, known as cognitive triads, or negative ideas about themselves, the world, and the future. These kinds of thoughts tended to occur to depressed people spontaneously because they happened naturally. Together, these three elements cause a disruption in normal cognitive function that affects perception, memory, and problem-solving abilities while fixating the individual on negative concepts.

### **The Cognitive Triad**

The trios of cognition, whichThe cognitive triads are three forms of negative (i.e., powerless and critical) thinking that are widespread in depressed individuals. They involve negative thoughts about oneself, the outside world, and the future. These kinds of thoughts tended to occur to depressed people spontaneously because they happened naturally. Three forms of negative (i.e., powerless and critical) thinking are prevalent in depression: unfavorable views about oneself, the outside world, and the future. These kinds of thoughts tended to occur to depressed people spontaneously because they happened naturally.



Together, these three elements cause a disruption in normal cognitive function that affects memory, perception, and problem-solving abilities while fixating the individual on negative concepts.



### Negative Self-Schemas

Depression-prone individuals develop a negative self-schema, according to Beck. They basically believe and perceive themselves in a negative and depressing way. Negative schemas may arise as a result of a traumatic childhood event, according to Beck. The following circumstances may result in negative schemas:

- The passing of a parent or sibling.
- Rejection, criticism, overprotection, carelessness, or abuse from parents; • Bullying or exclusion from peer groups at school.

Negative self-symbolisms increase a person's propensity to act irrationally, focus only on certain aspects of a situation, and ignore other equally significant elements.

### Cognitive Distortions

Many illogical thought processes (i.e., distortions of cognitive processes) are identified by Beck (1967). These counterproductive and unreasonable mental habits might lead to significant anxiety or sadness in the person.

- Arbitrary interference: Making judgments based on relevant or insufficient evidence; for instance, believing that you are unworthy because the outdoor performance you were planning to attend has been canceled due to rain.

- Selective abstraction: Paying attention to one facet of a situation while disregarding others: For instance, even if you are only a player on the football field, you feel accountable for your team's defeat.
- Minimization: downplaying the importance of a particular occasion. For instance, you may feel insignificant when your teachers commend you for a term's worth of outstanding work.
- Overgeneralization: making extensive and unfavorable assumptions based on a small number of unimportant occurrences. For example, if you typically receive consecutive As on exams and you receive D, you may feel that you are foolish.
- Personalization: Assigning to yourself the unfavorable emotions of others. For example, your teacher must be furious with you if he appears to be really angry when he enters the room.

## Critical Evaluation

After reviewing 14 meta-analyses on the efficacy of cognitive therapy developed by Beck, Butler and Beck (2000) came to the conclusion that roughly 80% of people found the therapy to be beneficial. The idea that depression has a cognitive foundation is supported by the fact that the therapy was shown to be more effective than medication therapy and had a lower relapse rate. This implies that people's lives can be made better by understanding the cognitive explanation.

## Material And Method :

### QUESTIONNAIRE TO EVALUATE LEVEL OF COGNITIVE IMPAIREMENT

#### 1. Mini Mental State Examination (MMSE):-

Instruction- Ask the question in the sequence listed below.

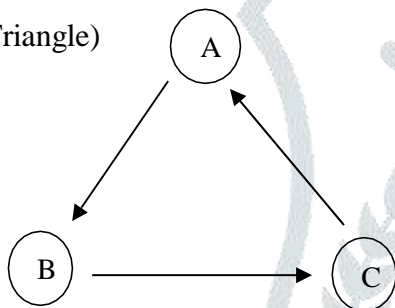
Maximum Score	Patient's Score	Questions
5		“What is the year? Season? Date? Day of the week ? Month”
5		“Where are we now: State? Country? Town/City? Hospital? Floor?”
3		After slowly and clearly naming three unrelated objects, the examiner asks the patient to name all three. Scores are derived from the patient's response. If it is feasible, the examiner repeats each one until the patient understands it. The quantity of tirals
5		“I would like you to count backward from 100 by sevens”. (93,86,79,72,65,...)Stop after Five Answers. Alternative. “spell WORLD backward.” (D-L-R-O-W)
3		“Earlier I told you the names of three things. Can you tell me what those were?”
2		Request the patient's name after presenting them with two basic objects, like a pencil and a wristwatch.
1		“Repeat the phrase: “ No ifs, ands, or buts”

3		“Take the paper in your right hand, fold it in half, and put it on the floor.” (The Examiner gives the patient a piece of blank paper.)
1		“Please read this and so what it says.” (Written Instruction is “Close your eyes.”)
1		“Make up and write a sentence about anything.” (This sentence must contain a noun and a verb.)
1		“Please copy this picture”. (The examiner gives the patient a blank piece of paper and asks him/her to draw the symbol below. All of 10 angles must be present and two must intersect.)
30		TOTAL

2. MONTREAL COGNITIVE ASSESSMENT (MOCA) :-

\* VISUOSPATIAL/ EXECUTIVE (Points- /5)

(Copy Triangle)



DRAW CLOCK (Ten past eleven)

\* NAMING (Points- /5)









**GERIATRIC ANXIETY SCALE (GAS)**

	<b>Not at all (0)</b>	<b>Sometimes (1)</b>	<b>Most of the time (2)</b>	<b>All of the time (3)</b>
1. My heart pounded quickly or forcefully.				
2. I was having trouble breathing.				
3. I experienced uneasy stomach.				
4. I had the impression that nothing was genuine and that I was outside of myself.				
5. I thought I was going to lose my grip.				
6. I was afraid of what other people thought.				
7. I was terrified of looking foolish or embarrassing.				
8. I had trouble sleeping.				
9. I has difficulty staying asleep.				
10. I had a bad temper..				
11. I occasionally lost my temper.				
12. I found it tough to focus.				
13. I became angry easily.				
14. I didn't feel as motivated to accomplish something I usually enjoy.				
15. I experienced social isolation or detachment.				
16. I was as if I was unconscious.				
17. It was difficult for me to stay still.				
18. I was overly concerned.				
19. I was unable to stop worrying.				

20. I was tense or restless.				
21. I was worn out.				
22. My body felt tight.				
23. I experienced neck and back ache.				
24. I believed that I was powerless over my life.				
25. I had the feeling that I was about to experience something horrible.				
26. My financial situation worried me.				
27. I was worried about my well-being.				
28. My children were on my mind.				
29. I feared that I would not live.				
30. I was worried that I would burden my kids or my relatives.				

A score of > 5 suggests anxiety.

TOTAL SCORE

### GERIATRIC DEPRESSION SCALE (GDS)

1. In general, how happy are you with your life?	Yes	
2. Have you given up on a lot of your hobbies and pursuits?	Yes	
3. Do you think there's nothing to live for?	Yes	
4. Are you frequently bored?	Yes	
5. Do you have a positive attitude?	Yes	
6. Do you fear that anything negative will occur to you?	Yes	
7. Do you generally feel content?		
8. Do you frequently feel powerless?		
9. Which would you rather do: remain home or go out and do something?		

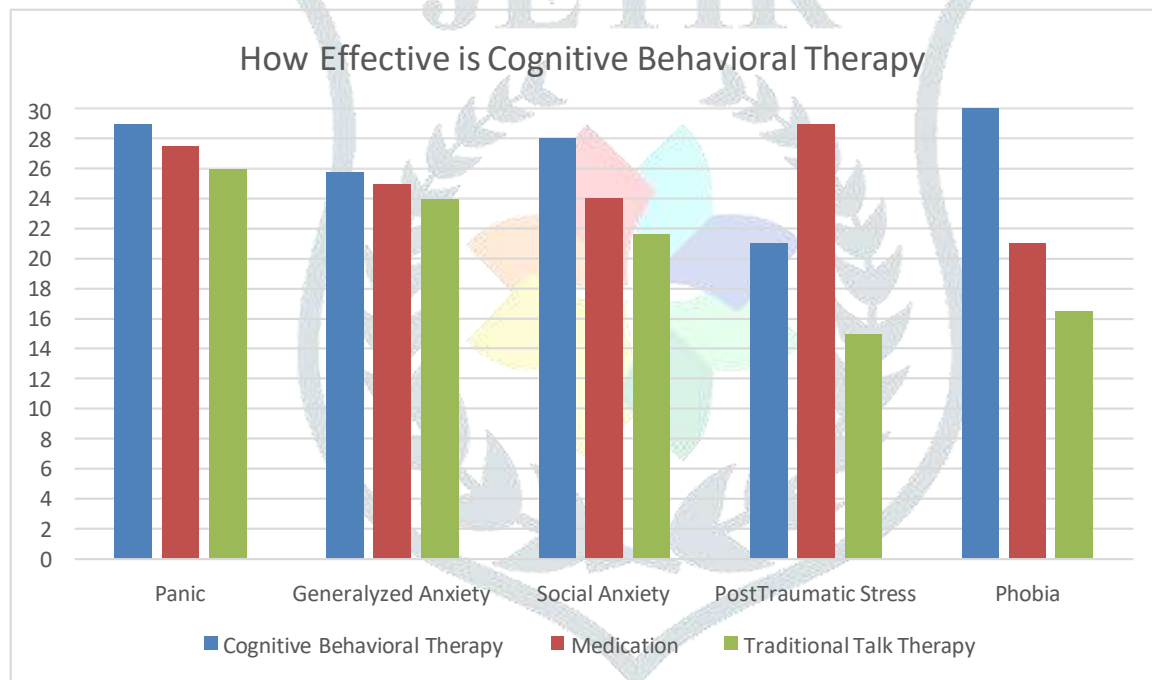
10. Do you think you struggle with memory more than other people do?		
11. Do you believe that now is a great time to be alive?		
12. Do you currently feel unworthy of anything?		
13. Feel energized?		
14. Do you think there is no hope for your situation?		
15. You believe that you are not as fortunate as most People are?		

Score 1 point for each bolded answer. A score of 5 or more suggests depression.

**Result:**

Out of 30 DEMENTIA PATIENTS, 12 Patients deny for the CBT.

And out of remaining 18 Patients, 10 have showed improvement in Dementia.



In 10 Patients, we have seen decrease in the following:-

1. Panic Attacks
2. Generalized Anxiety
3. Social Anxiety
4. Post Traumatic Stress
5. Phobia of something Selection

Criteria:

1. identified as having a dementia diagnosis (e.g., Alzheimer's, vascular dementia).
2. Show signs of mild to moderate cognitive impairment (as determined by standardized tests such as the MMSE or MoCA).

3. Displaying signs of agitation, anxiety, depression, and other behavioral and psychological conditions.

4. Identify a caregiver who is willing to take part in the study and offer more details.

**CBT Program:** 8–12 weekly sessions designed specifically for people with dementia. Stress management methods, behavioral activation, and cognitive restructuring are all covered in sessions. caregivers' participation in the therapeutic process.

### **Reference:**

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