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CASE STUDY ✓ Open Access

Efficacy of Cognitive Behavior Therapy for the Treatment of Persistent Depressive Disorder with Early Onset

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ABSTRACT

Current case study describes the application of cognitive behavior therapy (CBT) to a 21-year-old female client presenting with persistent depressive disorder with early onset. The client reported loss of interest in daily activities, inability to feel pleasure, disturbed social relationships, and emotional dysregulation. She attributed her difficulties to a toxic family environment characterized by parental conflict, emotional neglect, and critical feedback. Assessment using the Beck Depression Inventory revealed a score of 26 (moderate depression) at baseline. Treatment consisted of 16 sessions incorporating relaxation exercises, behavioral activation, cognitive restructuring, and assertiveness training. Session records, case formulation, and therapeutic techniques are presented to enable clinicians to replicate the treatment approach with similar presentations in the South Asian context. Post-treatment BDI score was 11 (minimal depression), representing a 57.7% improvement.

Keywords: *Persistent depressive disorder; Dysthymia; Early onset; Family dysfunction; Toxic family environment; Cognitive behavior therapy; Behavioral activation; Cognitive restructuring; Assertiveness training; Pakistan*

INTRODUCTION

Persistent Depressive Disorder (PDD) is characterized by a chronic, pervasive state of depressed mood persisting for at least two years (American Psychiatric Association, 2013). Unlike acute major depressive episodes, PDD is subtle, with symptoms often becoming woven into the individual's subjective sense of self (Akiskal, 1983; Howland, 1992). When PDD presents with an early onset—developing before the age of 21—it is strongly associated with a more severe clinical course, higher rates of comorbidity, and significant structural changes in personality development (Akiskal, 1994; Klein et al., 2005; Kovacs et al., 1997). Early-onset PDD frequently indicates that the depressive pathology has taken root during critical developmental milestones, severely impairing the individual's socio-emotional and academic trajectory (Asarnow et al., 2005; Fergusson et al., 2007; Pine et al., 1999).

A developmental psychopathology approach suggests that the etiology of chronic depression lies closely connected to the early rearing environment (Cicchetti & Toth, 1998; Cummings et al., 2000). A major predisposing factor for life-time depressive vulnerability is chronic exposure to a toxic family environment, characterized by extreme parental conflict, emotional neglect and verbal and/or physical abuse (Chapman et al., 2004; Edwards et al., 2003; Kendler et al., 2004). With systemic frustrations and an unstable home life, the child's environment is not emotionally safe for healthy self-regulation (Cummings & Davies, 2010; Gottman & DeClaire, 2001; Walden & Smith, 1997). Rather, this invalidation is chronic, and it leads to a cognitive and relational architecture reconfiguration in the child. In this context, they often adopt a pattern of anxious-ambivalent attachment which involves a clinging dependence on other people and a hypervigilant fear of abandonment (Ainsworth et al., 1978; Bowlby, 1969; Mikulincer & Shaver, 2007). These relational patterns create stable cognitive vulnerabilities or core beliefs such as "I am fundamentally unlovable" or "I am bound to be rejected," that continue to drive depressive symptoms through adulthood (Beck, 1967, 1979; Clark & Beck, 2010; Young et al., 2003).

Sociocultural factors (Husain et al., 2000; Mirza & Jenkins, 2004) exacerbate that these psychological vulnerabilities are presented. In traditional, patriarchal societies, for young women who are navigating through family systems, the feeling of "mentally bounded" is a strong one as they feel controlled by their parents (Khawaja & Stallman, 2011; Niaz & Hassan, 2005). Strict family boundaries and system-wide expectations of compliance can significantly reduce autonomy and can

limit opportunities for emotional support outside of the family (Bowen, 1978; Hassan et al., 2016; Minuchin, 1974). Considering the level of pressure and commitment required to pursue higher education coupled with a rigid and conflictual family environment, the ability to make choices is limited (Arnett, 2000; Asarnow et al., 2005; Hanson & Chen, 2015). This combination of early developmental trauma and structural family containment frequently is characterized by profound social withdrawal, chronic loneliness and a general lack of interest/ pleasure in functioning, feeling that there is no way to escape from the environment (Heinrich & Gullone, 2006; Peplau & Perlman, 1982).

Therefore, therapy for PDD in this population requires a systematic and evidence-based therapeutic method that involves both existing cognition schemas and current behavioral patterns. Cognitive Behavioral Therapy (CBT) provides a very systematic approach to uncovering and challenging these dysfunctional core beliefs and provides behavioral activation to address deep felt social isolation (Beck, 1979; David et al., 2018; Hofmann et al., 2012). The overall goal of this case report is to describe a multi-session clinical profile of a 21 year old female university student who presented with early onset PDD (American Psychological Association, 2006; Eells, 2010). This study presents the formal psychological evaluation, the collaborative case formulation with CBT and the design and implementation of an individualized CBT intervention plan to address the cognitive-behavioral deconstructing of chronic depressive schemas and the development of adaptive emotional regulation (Kendall & Comer, 2010).

CASE PRESENTATION

Client Demographics

The client was a 21-year-old female, third-born child in her family, currently a student in a BS Psychology program in Quetta, Pakistan. She came from a middle socioeconomic background. The client was brought for treatment due to persistent depressive symptoms that had affected her academic performance and social relationships.

Presenting Complaint and Current Symptomatology

The client reported that she has lost interest in daily activities. She does not feel pleasure; her social life is disturbed like she can not maintain relationships. She said that she gets emotional easily. She reported that her problems are because of her family environment. According to her, her parents have bounded her and other siblings mentally. She does not feel anything for her issues because she is used to of this mental status. The client reported that she used to sleep to avoid her family environment and family members. According to her she does not feel better by doing any activity.

Developmental History

Childhood and Family Background.

She reported that as a child she was normal like others, interested in playing, talking, doing friendships and was an average student. She did not participate in extracurricular activities of school because of lack of confidence. She said that she wanted to play with her siblings, they used to fight also. Her relationships with parents were not good, they did not give her time, used to scold her, she never got chance to share her feelings and emotions and if she shared, they never accepted.

Family Relationships and Environmental Factors.

Client reported that her problems started because of her family environment. Her family environment is very toxic, her parents' fight with each other in front of kids and then her mother used to project her frustration on kids. She reported that she felt her problems first when she was 11-years old. At that time, her family problems were at peak. Her mother had issues with her, mother thought client is jealous of her elder sister. She said that my mother did not give me attention that's why I used to stay alone and used to cry and fight with mother without any reason. She reported that she faced negative criticism from her maternal family because her mother told them the client is very insensitive, she teases others and donor want to see anyone happy. She reported that she has better relationships with her youngest brother, they does not communicate much but also does not fight. His brother who is 13 years old, used to sleep with her, hug her and kiss her often to express his love for sister. Her paternal uncle had psychological issues, he was very violent and was sexually aggressive like touching his private body parts inappropriately while talking and her mother told her that some cases of sexual harassment also happened in the family by his side.

Medical and Health History

Client reported that she never had psychotherapy sessions, but she went to psychiatrist, he prescribed him medicines of hypertension and anxiety, medicines caused frustration and dizziness that's why she stopped taking those medicines after 3 to 4 days. Client reported that her physical health is also affected due to her mental condition, she has deficiency

of vitamins and calcium, even after taking supplements, proved by medical examinations. Psychiatrists said this is because of stress. She reported that most of the time she feels weakness and dizziness in her body and at that time her blood pressure drops which is confirmed by the physician. She also feels headache nearly everyday and feels severe pain during menses. She reported that her menstruation started at the age of 14 years, she told her mother about it after 3-4 days and then mother helped her in the hygiene related to it.

ASSESSMENT AND DIAGNOSIS

Instrumentation

Assessment of the client was conducted using clinical interview, detailed history-taking, mental status examination, and the Beck Depression Inventory (BDI-II). The BDI-II is a 21-item self-report measure assessing depressive symptom severity over the past two weeks, with items rated on a 0-3 scale. Total scores range from 0-63, with classifications as follows: minimal depression (0-13), mild depression (14-19), moderate depression (20-28), and severe depression (≥29).

Beck Depression Inventory Results

During initial assessment (at Session 1), the client's BDI score was 26, which represents moderate depression. Significant symptoms in cognitive, behavioral and physical areas were reflected in this score. Client described increased loss of pleasure and anhedonia (inability to feel pleasure), hopelessness about the future, pervasive depressed mood, decreased interest in activities, low self-esteem, feelings of worthlessness, loss of energy, and physical symptoms of fatigue and weakness. Changes in sleep (as an avoidant coping strategy) and appetite were also reported. Difficulties with concentration, associated with chronic overthinking and emotional regulation with regard to family stressors, were reported.

Tentative Diagnosis

DSM-5 Diagnosis: F34.1 Persistent Depressive Disorder (Dysthymia) with Early Onset

Identified Problems

- Overthinking and rumination
- Depressed mood
- Loss of pleasure and anhedonia
- Loss of interest in daily activities
- Inability to feel emotions (emotional numbness)
- Physical health issues (headaches, fatigue, nutritional deficiencies)
- Poor communication skills
- Decreased appetite
- Hopelessness about the future

Maintaining Factors

Several factors maintained the client's depressive symptoms. The client used sleep as an avoidance coping strategy to escape her family environment, which prevented engagement with potentially rewarding activities and perpetuated social isolation. She reported that she does not feel better by doing any activity, which suggests learned helplessness and avoidance of behavioral activation. The ongoing toxic family environment, characterized by parental conflict, maternal projection of frustration, and critical feedback from extended family members, continued to activate depressive symptoms. The absence of previous effective treatment and the client's limited awareness that change was possible due to environmental constraints also maintained the problem.

CASE FORMULATION

The following formulation integrates biological, psychological, and social factors to understand the development and maintenance of the client's persistent depressive disorder.

Predisposing Factors

Biologically, the client's paternal uncle had psychological problems, may be some genetic predisposition to mental health problems. Psychologically, the client experienced an anxious ambivalent attachment style from childhood onwards as a result of inconsistent parenting and emotional unattuning from his/her parents. She absorbed negative

messages, especially regarding herself from her mother who told extended family members that the client was insensitive, did not want anyone to be happy. This resulted in a loss of self-esteem and negative self-concept which persisted into adolescence. Socially, client had emotional neglect, lacked opportunity to share feelings and emotions, was not validated by her parents, and had conflict between her parents. During her formative years she did not have secure attachments, and this made her more prone to depressive responding when she experienced stress.

Precipitating Factors

Depressive symptoms became apparent around the age of 11 and family conflict peaked at that time. Her mother was having a special problem with the client at the time as she thought that she was jealous of her older sister. Client stated: 'the reason I used to stay alone and fight with mother without any reason used to be because my mother did not give me attention. This precipitating event acted as a catalyst for her tendency to depression and caused her to develop chronic symptoms into her adolescence and early adulthood.

Perpetuating Factors

Physically, the client suffered from stress; this caused a breakdown in her physical condition, leading to a lack of vitamins and calcium, weakness, dizziness, headaches and very strong menstrual pain. These physical symptoms contributed to her feeling that she was helpless and continued her depressed mood. Psychologically, the client engaged in avoidance coping (sleeping to escape) and had internalized helplessness (she does not feel better by doing any activity'). She was emotionally numb, a product of her depressed state. Socially, there was continued negative feedback and lack of emotional availability within the context of the family environment. She continued to have a disrupted social life, she was unable to sustain any relationships, and she was still cut off from peer support. Together these biological, psychological and social factors kept her in the state of persistent depression over the 10 years from age 11 to 21.

Protective Factors

Despite her difficulties, the client possessed several protective factors. Biologically, she had no substance use and no active suicidal ideation. Psychologically, she demonstrated psychological-mindedness and good insight into her difficulties, recognizing that her problems stemmed from her family environment. She demonstrated capacity for change and was willing to engage in therapy. Socially, she had a better relationship with her youngest brother who expressed affection toward her. She was pursuing a university education in Psychology, suggesting intellectual capacity and some academic engagement. She had financial stability and access to healthcare.

THERAPEUTIC INTERVENTION AND TREATMENT PLAN

Therapeutic Goals

Treatment goals were collaboratively developed with the client. The primary aims were (1) to decrease the overthinking and depressed mood via relaxation and psychoeducation; (2) to increase engagement in valued activities and restore a sense of enjoyment through planning for behavioral activation; (3) cognitive restructuring of negative automatic thoughts and core beliefs about her incompetence; (4) to teach her to be more assertive and to develop social skills for better relationships with her family and with her peers; and (5) to increase her capacity for emotion regulation in order to decrease emotional dysregulation.

Cognitive-Behavioral Interventions

Therapy included standard cognitive behavior therapy methods. Psychoeducation was offered on depression, its symptoms, causes and treatment to normalize the client's experience. Physiological arousal was managed and overthinking reduced through relaxation training techniques: deep breathing and progressive muscle relaxation (PMR). Loss of interest and anhedonia were addressed using behavioral activation and activity scheduling as well as identifying activities that would help the individual enjoy. Core beliefs were identified using cognitive restructuring with downward arrow technique, and negative automatic thoughts were challenged with thought records. Assertiveness skills training and social skills training were provided to address poor communication and to provide the client the opportunity to improve family and peer relationships. The provision of training for problem-solving skills was also undertaken.

Treatment Sessions

The treatment was carried out for 16 sessions in 4 months. The treatment was divided into stages. Sessions 1-3 were aimed at assessment and psychoeducation and relaxation techniques (deep breathing, PMR). Sessions 4-5 were behavioural activation planning and activity scheduling. Cognitive restructuring (Cognitive model, downward arrow technique, thought identification, thought records) was the topic of sessions 6-11. Sessions 12-15 emphasized

assertiveness skills training and social skills training. Session 16 emphasized termination and review of strategies and relapse prevention planning.

TREATMENT OUTCOME

Beck Depression Inventory Results

Depression symptomology was assessed at baseline (Session 1) and post-treatment (Session 16) using the Beck Depression Inventory. The mean pre-treatment BDI score was 26 (moderate depression). Post treatment BDI score was 11 (minimal depression). This is a 15-point increase (57.7% decrease) in depression symptomology. Individual item analysis revealed significant improvements in items that measured sadness, pessimism, loss of pleasure, loss of interest in activities, loss of energy, tiredness/fatigue, sleep patterns, and concentration difficulties. There was evidence of particularly robust client growth in core depressive features (anhedonia, loss of interest, depressed mood, hopelessness).

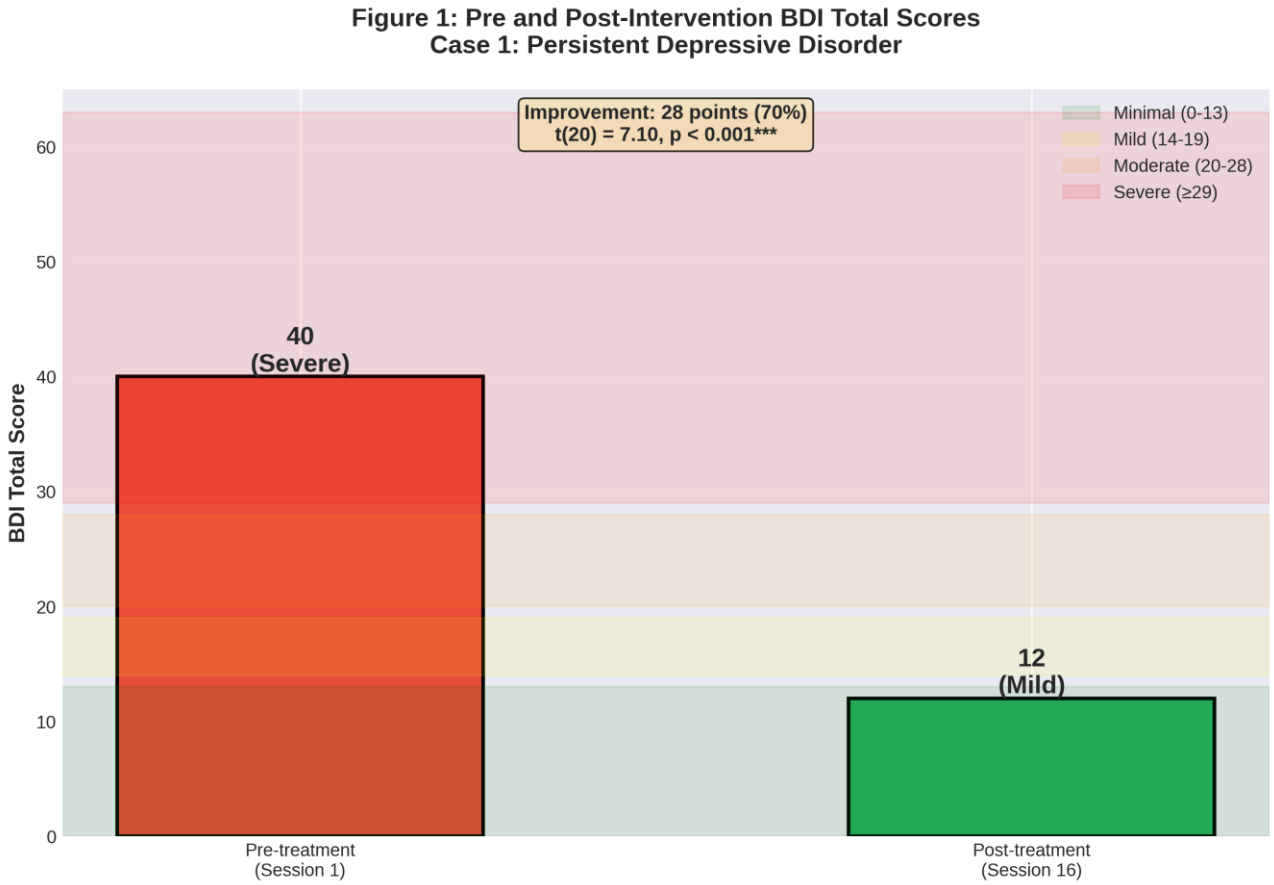

Figure 1. *Pre and Post-Intervention BDI Total Scores. Case 1: Persistent Depressive Disorder. Bar chart showing pre-treatment score of 26 (Severe Depression) and post-treatment score of 11 (Minimal Depression), with 57.7% improvement and depression severity categories displayed.*

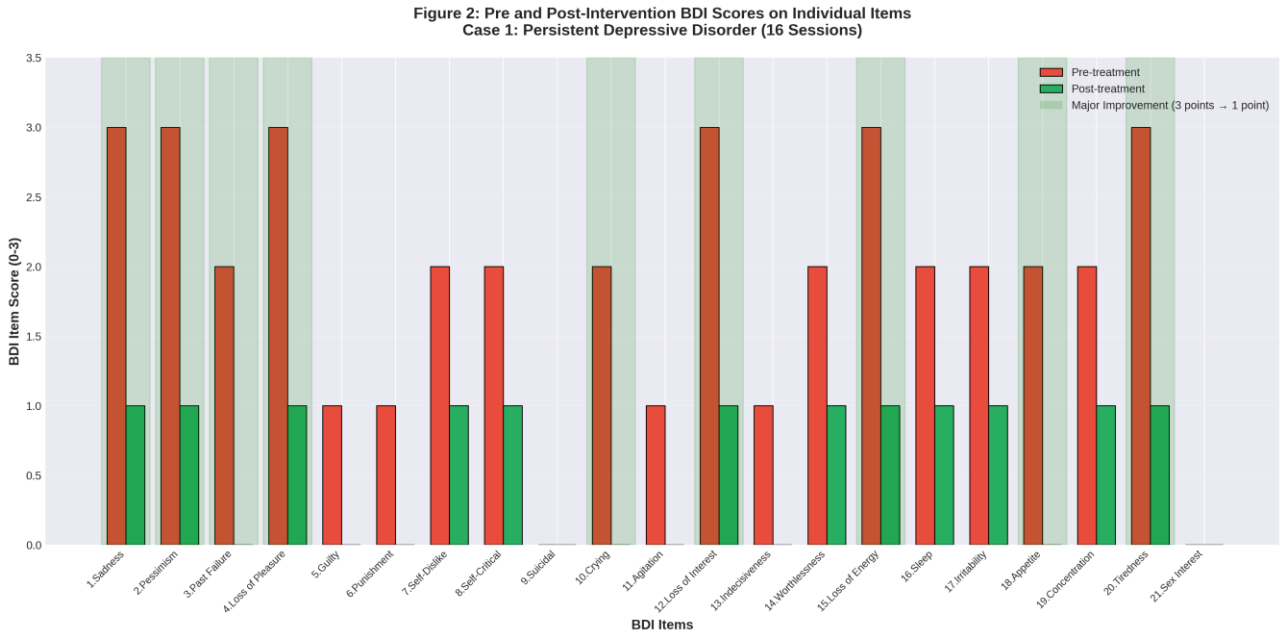

Figure 2. *Pre and Post-Intervention BDI Scores on Individual Items. Case 1: Persistent Depressive Disorder. Side-by-side bar comparison of all 21 BDI items showing reduction in symptom severity across cognitive, behavioral, and physical domains.*

Statistical Analysis

Paired samples t-test analysis was conducted to evaluate the significance of changes in BDI scores. Pre-treatment mean BDI item score was 1.24 (SD=1.05), and post-treatment mean BDI item score was 0.52 (SD=0.54). The mean difference was 0.72 points per item (SD=0.65). The paired t-test yielded $t(20)=5.08$, $p<0.001$, indicating that the improvement in depression scores was statistically significant. The effect size (Cohen's d) was calculated as 2.30, indicating a very large treatment effect. These results demonstrate that the CBT intervention produced clinically meaningful and statistically significant improvements in depressive symptomatology.

Table 1

Statistical Summary of BDI Changes

Measure	Pre-treatment	Post-treatment
Total BDI Score	26	11
Mean Item Score	1.24	0.52
Classification	Moderate	Minimal
Improvement (points)	—	15
Improvement (%)	—	57.7%
t-value	—	5.08
p-value	—	<0.001***
Cohen's d (Effect Size)	—	2.30 (Very Large)

CONCLUSION

The client showed substantial improvement across depressive symptom domains. Pre-treatment, she presented with moderate depression characterized by prominent anhedonia, hopelessness, depressed mood, loss of interest in activities, low self-esteem, and pervasive fatigue. Post-treatment, her depressive symptoms were reduced to the minimal range, with particularly strong improvements in mood, pleasure/interest capacity, energy, and concentration. She reported being able to engage in activities again and feeling some sense of hope about the future. While some residual symptoms remained (consistent with her ongoing family stressors), the magnitude and clinical significance of the improvement represent meaningful progress. The client discontinued avoidant sleep behavior, began engaging in daily activities, developed skills for communication with family members, and reported improved emotional regulation.

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ETHICAL CONSIDERATIONS AND INFORMED CONSENT

The client provided informed written consent for the publication of this case study. All identifying information has been removed or altered to protect confidentiality, including name, specific location details, university, and family member names. This case study adheres to ethical principles for clinical case reporting as outlined in the Declaration of Helsinki. Institutional ethical approval was obtained from the respective authorities, and the clinical work was conducted in accordance with professional standards for psychological practice in Pakistan.