

# Efficacy of a Psychoanalytic Paradoxical Therapy model on Nail Biting Symptoms and Anxiety: A Clinical Case Study

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Article type:  
Original Research

Article history:  
Received 15 December 2025  
Revised 09 February 2026  
Accepted 16 February 2026  
Published online 01 March 2026

## ABSTRACT

Anxiety and nail-biting are among the most common behavioral and psychological issues observed during childhood and adolescence, often associated with a range of psychological consequences. The present study aimed to examine the effectiveness of Psychoanalytic Paradoxical Therapy in reducing symptoms of anxiety and nail-biting behavior. This research was conducted as a clinical case study. The client was an 18-year-old single female diagnosed with anxiety and chronic nail-biting for more than 12 years, who received treatment at the Specialized Psychotherapy Clinic of the Faculty of Psychology, University of Tehran. The study followed a baseline–intervention–follow-up design. The therapeutic intervention consisted of six individual sessions based on the principles of paradoxical therapy and free association technique, implemented within the framework of the Psychoanalytic Paradoxical Therapy Model. Data were collected through a clinical diagnostic interview, the Malon & Massler Nail-Biting Severity Scale (1952), and the Depression, Anxiety, and Stress Scale (DASS-21; Lovibond & Lovibond, 1995). Findings indicated a significant reduction in anxiety symptoms and nail-biting severity, accompanied by stable improvement over time. Positive changes in emotion regulation, a marked decline in nail-biting behavior, and visible enhancement in nail appearance were evident in both client self-reports and therapist evaluations. The results suggest that the Psychoanalytic Paradoxical Therapy Model demonstrated high efficacy, with therapeutic improvement rated at approximately 90%. Two- and six-month follow-up assessments revealed that treatment gains were maintained over time, with no signs of relapse. This case study highlights the potential of paradoxical therapy as an effective intervention for anxiety-related and obsessive-compulsive spectrum behaviors such as nail-biting. Further controlled studies are recommended to validate these findings.

**Keywords:** Nail-biting, Anxiety, Paradoxical Therapy, PTC Model, Psychoanalytic Psychotherapy

## How to cite this article:

Asayesh, M.H., & Mohammadi, M. (2026). Efficacy of a Psychoanalytic Paradoxical Therapy model on Nail Biting Symptoms and Anxiety: A Clinical Case Study. *Mental Health and Lifestyle Journal*, 4(2), 1-22. <https://doi.org/10.61838/mhlj.166>

## Introduction

Nail-biting (NB) is a persistent oral habit characterized by compulsive and repetitive behavior(1). It is classified as a Body-Focused Repetitive Behavior (BFRB), a category that includes actions such as skin picking, hair pulling, nail-biting, and lip or cheek biting (2, 3). These behaviors are typically performed automatically and without conscious awareness. They are often associated with anxiety, stress, and difficulties in emotion regulation (4). Empirical studies have shown that nail-biting frequently functions as a coping mechanism to alleviate anxiety and tension, while anxiety itself can act as a precipitating and reinforcing factor (5, 6). Individuals who engage in nail-biting commonly report feelings of tension or discomfort before the behavior and relief or satisfaction afterward (7, 8). Nail-biting is conceptualized as a

manifestation of emotional and behavioral dysregulation and can be classified as either pathological or non-pathological (9). The behavior typically begins in early childhood, often after the ages of three or four, and may persist into adulthood. It may also emerge during adolescence, and in rare cases, adults may develop the habit suddenly (1). Epidemiological studies estimate that approximately 30% of children and 20% of adults engage in nail-biting behavior (10, 11). Moreover, recent findings indicate that nail-biting tends to intensify under stressful circumstances, such as during the COVID-19 pandemic, highlighting the critical role of anxiety in the exacerbation of BFRBs (12).

There has been considerable debate regarding the underlying causes of nail-biting, and its exact etiology remains uncertain. Some studies have conceptualized this behavior as a manifestation of behavioral problems, while others have identified it as a symptom of anxiety or a nervous habit (7). A variety of physiological and environmental factors contribute to the development and persistence of body-focused repetitive behaviors. Among these, anxiety and stress play a particularly significant role. When a child experiences feelings of worry, tension, or stress, they may engage in nail-biting as a temporary means of reducing unpleasant emotional arousal (8). Additionally, frustration, boredom, or restlessness can trigger nail-biting behavior in children (9, 13). In such cases, the behavior is often performed unconsciously, with the child unaware of the habit due to distraction or automaticity. Moreover, family conflicts, parental divorce, school transitions, and psychosocial difficulties have all been identified as potential contributing factors (14). In some instances, nail-biting may arise from low self-esteem, high anxiety levels, loneliness, anger, or habit imitation from a family member (7). Emotional and psychological difficulties have also been strongly associated with this behavior. Specifically, nail-biting has been linked to a range of psychiatric disorders, including Obsessive-Compulsive Disorder (OCD) (11), Oppositional Defiant Disorder (ODD), Attention-Deficit/Hyperactivity Disorder (ADHD), Major Depressive Disorder (MDD), and Separation Anxiety Disorder (SAD) (15, 16). Further evidence also connects nail-biting with other anxiety-related and emotional regulation disorders (17).

Nail-biting can lead to a variety of psychological, social, and physical consequences. Children or adults who engage in nail-biting may be mocked or criticized by others, often experiencing negative emotions such as shame and embarrassment. They may also be labeled as having an “ugly” or “bad habit.” Parents, in an attempt to stop their children from nail-biting, sometimes resort to scolding or coercive strategies; however, such interventions are typically temporary and ineffective (18). If left unaddressed, oral habits such as nail-biting may result in several medical and dental complications, including orthodontic problems, bacterial infections, alveolar damage, intestinal infections, dental malocclusion, and attrition of the anterior teeth. Furthermore, persistent nail-biting can lead to visible alterations in nail appearance and overall hand aesthetics (19). Long-term risks include cutaneous, gastrointestinal, or systemic infections, though these complications are generally treatable with proper medical care. In more severe cases, nail-biting may cause fractures or chipping of the teeth, necessitating corrective dental treatment. Beyond the physical impact, nail-biting may also impose social limitations, particularly in activities that involve hand use or exposure, such as writing, drawing, or social interaction (20). Moreover, feelings of shame and guilt associated with the behavior can contribute to significant psychological distress, reinforcing a negative self-perception cycle (21).

A variety of non-pharmacological interventions have been developed for the treatment of nail-biting, most of which emphasize the enhancement of self-confidence and self-esteem as a foundation for behavioral change. One of the most common and effective interventions is Behavioral Modification Therapy, which focuses on positive reinforcement and consistent monitoring rather than punishment, threats, or criticism (22). Practical strategies such as applying bitter-tasting nail polish or covering the nails are also frequently employed to prevent the act of nail-biting (23).

Habit Reversal Training (HRT) is another structured behavioral technique that has demonstrated significant efficacy in previous research (24). In HRT, individuals are first encouraged to identify the specific triggers and contexts in which nail-biting occurs, and then to practice competing responses—for example, clenching their fists or chewing gum—to replace the maladaptive behavior. This method often incorporates relaxation exercises and enhanced self-monitoring, allowing individuals to gain greater control over their automatic responses (25).

In addition, Interpersonal Psychotherapy (IPT) has been shown to reduce symptoms by improving interpersonal relationships, enhancing communication skills, and strengthening social support systems (26).

Another promising approach for treating anxiety and obsessive-compulsive spectrum disorders is Paradoxical Therapy (Paradoxotherapy) (27-30). A specific structured variant of this model—known as the Cure = Timetable + Paradox (PTC) program—has been successfully applied to a range of psychological conditions, including Obsessive-Compulsive Disorder, Illness Anxiety Disorder, Social Anxiety Disorder, and Body Dysmorphic Disorder (31-35).

This integrative framework combines systemic, analytic, and behavioral components to achieve rapid and decisive therapeutic outcomes, with empirical studies repeatedly supporting its effectiveness (31-34). Within the paradoxical approach, clients are instructed to consciously engage with their symptoms in controlled time frames, thereby facilitating desensitization, emotional regulation, and cognitive restructuring (30).

Taken together, nail biting can be conceptualized as a maladaptive behavioral habit that warrants psychotherapeutic intervention and, if left untreated, may persist into adulthood. Given the demonstrated effectiveness of the Paradoxical Therapy model in the treatment of anxiety and compulsive behaviors, the present study aims to evaluate the efficacy of a novel psychotherapeutic approach, termed Psychoanalytic Paradoxical Therapy, which integrates paradoxical interventions with the psychoanalytic technique of free association, thereby combining core principles of psychoanalysis with paradox therapy, in reducing anxiety symptoms and nail-biting behaviors within a clinical case framework. A distinctive feature of the present manuscript is the comprehensive and systematic description of the psychotherapy sessions, including the rationale for interventions, session-by-session therapeutic processes, and observed clinical changes. Such detailed documentation is especially valuable for the education and training of students, early-career clinicians, and psychotherapy trainees, as it bridges the gap between theoretical knowledge and clinical practice.

## Methods and Materials

The primary objective of this article is to highlight the scientific and educational value of case-based research in psychotherapy. The present study employed a clinical case study design utilizing a baseline–intervention–follow-up framework. Case studies play a crucial role in advancing clinical knowledge by

providing in-depth insights into therapeutic mechanisms, clinical decision-making, and patient–therapist interactions that are often not fully captured in large-scale quantitative studies. In particular, detailed case analyses allow for a nuanced understanding of how therapeutic models are applied in real-world clinical settings.

In this type of research design, initial psychological assessments are conducted during the baseline phase to evaluate the client’s clinical indicators, followed by repeated assessments after the intervention and again during the follow-up phase, allowing for the observation of changes over time. Throughout the therapeutic process, the client’s condition was systematically monitored and documented in each session based on clinical observations and the client’s self-reports.

For the initial assessment, the client participated in a diagnostic interview and completed two standardized instruments: the Depression, Anxiety, and Stress Scale (DASS-21; Lovibond and Lovibond (36)) and the Nail-Biting Severity Scale Malone and Massler (37).

## **Measures**

### **1 .Nail-Biting Severity Scale:**

To assess the severity of nail-biting behavior, the Nail-Biting Severity Scale developed by Malone and Massler (37) was employed. This scale classifies individuals into three categories: those who do not bite any fingers (non-biter), those who bite all ten fingers (definite biter), and those who bite between one and nine fingers (uncertain biter). Each finger is scored individually on a scale from 0 to 3+, reflecting the intensity of nail-biting: a score of 0 indicates no nail-biting behavior, 1+ represents mild severity, 2+ indicates moderate severity, and 3+ denotes high severity. The total score of all ten fingers constitutes an overall index of nail-biting severity, ranging from 0 to 30, with a cutoff score of 16, above which the behavior is considered to be of high intensity. The scale’s reliability and validity were initially reported by (37) with a Cronbach’s alpha of 0.95, and subsequent studies in Iran (38) confirmed its reliability with a Cronbach’s alpha of 0.73.

### **2 .Depression, Anxiety, and Stress Scale – 21 Items (DASS-21):**

To measure depression, anxiety, and stress, the 21-item version of the DASS (36) was used. The questionnaire comprises 21 items, divided into three subscales (depression, anxiety, and stress), with 7 items per subscale. Participants rate their psychological state over the past week using a 4-point Likert scale ranging from “Did not apply to me at all” to “Applied to me very much or most of the time.” In Iran, the validity and reliability of this instrument have been confirmed by Sahebi, Asghari (39). Additionally, studies on hemodialysis patients reported high prevalence rates of depression (63.05%), anxiety (65.20%), and stress (67.40%) using this scale. Scoring involves calculating the sum of items in each subscale, which is then multiplied by 2 to obtain the final score for each component.

The data were analyzed using a single-case study approach following an A-B-A design, which includes the baseline, intervention, and follow-up phases. To examine changes in nail-biting severity and emotional symptoms (as measured by the subscales of the DASS-21), descriptive statistics, including means and standard deviations, were calculated for each phase.

Additionally, the magnitude of the intervention effect was assessed using Cohen’s *d* and Effect Size *r*. All analyses were conducted manually based on the data collected at each stage of the study.

## **Psychoanalytic Paradoxical Therapy Protocol**

Psychoanalytic Paradoxical Therapy consists of three core components: 1- the paradoxical techniques, 2- free association technique and 3- the timetable strategy. In this three-component approach, the client is prescribed the exact symptoms of their disorder (paradoxical instruction) and is required to systematically experience and reproduce these symptoms with free association technique according to a structured schedule designed collaboratively with the therapist (timetable component). Within the Psychoanalytic Paradoxical Therapy model, these three components are always applied simultaneously and are considered inseparable and interdependent elements of the intervention. Following the completion of the Paradoxical Therapy intervention sessions, the client was re-assessed using the DASS-21 (36) and the Nail-Biting Severity Scale (37) at three distinct time points: immediately post-intervention and at two follow-up assessments, in order to evaluate the stability and persistence of therapeutic effects. The results of these assessments are presented in Tables 1–2.

### **Case Presentation**

The client, Bita, is an 18-year-old single female and a first-year Chemical Engineering student, who presented to the Psychology Clinic at the University of Tehran with a cluster of anxiety symptoms and chronic nail-biting behavior. According to the client, both anxiety and nail-biting behaviors originated in childhood. She reported previous consultations with psychiatrists or psychologists, although there was no family history of psychological disorders. At intake, the client self-rated the severity of her nail-biting behavior and anxiety at 100% and 95%, respectively, indicating a high level of perceived distress and functional impairment.

### **Session 1 Summary: Social Phase and Problem Exploration**

Social Phase (Introduction and Rapport Building).

The therapist greeted the client: “Hello, welcome. I am Dr. Asayesh, a counselor and psychotherapist at this center, and I have been working here for 14 years. Could you please introduce yourself so I can get to know you better”?

The client, Bita, replied: “I am Bita, 18 years old, a chemical engineering student, living in Tehran”.

### **Presenting Problems:**

The therapist asked: “What brings you here today”?

Bita explained: “I have had anxiety since childhood. I have always strived for perfect scores—even 19.75 was unacceptable for me. I could not sleep on exam nights. Another problem is nail-biting, which I have had since childhood. This behavior has always caused me embarrassment and lowered my self-confidence”.

The therapist summarized: “So your two main issues are perfectionistic anxiety and nail-biting”.

### **Exploration of Underlying Issues:**

Through structured questioning, the therapist explored the roots of these difficulties:

- 1-Bita’s vulnerability: The client had an anxiety-prone disposition since childhood.
- 2-Family pressures: Bita’s parents, particularly her mother, reacted negatively to low academic grades and nail-biting behavior, which inadvertently heightened her anxiety.
- 3-Lack of emotional attention: The father was emotionally absent, and the mother, preoccupied with work and caring for a younger sibling, could not adequately attend to Bita’s emotional needs.
- 4-Need for approval: Bita relied on academic success as a way to gain attention and affection from her parents.

### **Emotional Experiences During the Session**

During the session, the client became tearful several times while discussing experiences such as:

- 1-Feeling neglected during childhood,
- 2-Repeated maternal criticism regarding nail-biting,
- 3-Unmet need for paternal approval,
- 4-Lack of therapeutic attention.

Therapist: “How did you feel when you got a low grade”?

Client: “I felt like a failure. Once in elementary school I got 14, and my mother signed it with disappointment. Another time, I changed my 15 to 18.5 myself”.

Therapist: “So you experienced intense anxiety and had to hide your difficulties! When did the nail-biting start”?

Client: “Since first grade. My mother always criticized me, but I mostly did it alone”.

Therapist: “How is your relationship with your parents”?

Client (tearfully): “My father was always absorbed in work. My mother was also occupied with her own problems. I felt ignored”...

Therapist: “It’s okay to cry. These pains have been inside you for years”.

Client (crying): “They never understood me. Even when I bit my nails, they only criticized me. They never asked why I was doing it”.

Therapist: “So you turned to studying to gain attention”?

Client: “Exactly! Only when I got good grades did they pay attention. During summers, when school was closed, I felt empty”.

### **Treatment History**

Therapist: “From first grade until now, have you ever tried on your own to stop this behavior?”

Client: “Yes, exactly. Back then, not so much, but recently—before coming to see you—I bought a bitter-tasting nail polish from the pharmacy and tried it on my nails. But it doesn’t really stop me. I feel like I’m fooling myself. Maybe it could have worked when I was a kid, but not now”.

Therapist: “Have you taken any treatment measures or medications before”?

Client: “I’ve had a couple of unsuccessful attempts at therapy. In my previous experience with a psychologist, it didn’t go well because I felt too ashamed to mention my nail-biting problem. For a while, I also took anti-anxiety medication, but I didn’t like the numb feeling it gave me, so I stopped taking it.”

### **Treatment Plan:**

The therapist presented the treatment protocol as follows:

- 1-Daily exercises: Twice a day (3:30 p.m. and 9:00 p.m.) for 10 minutes, focusing on experiencing feelings of sadness, shame, anger, and anxiety related to nail-biting memories.
- 2-No suppression of emotions throughout the treatment period, and readiness for experiencing intense emotions.
- 3-Allowing crying and emotional expression during sessions.
- 4-Permitting nail-biting behavior at this stage of treatment.

Therapist: “Alright, let’s move on to the treatment”.

Client: “How long will it take to see results, doctor”?

Therapist: “Don’t rush. These problems have developed over many years, but if you practice consistently, you can see significant improvement within a few weeks to months”.

Client: “Thank you, doctor. I really want to get rid of these problems”.

Therapist: “Okay, Bit. To start the treatment, I want you to spend 10 minutes twice a day (3:30 p.m. and 9:00 p.m.) focusing on: 1-Memories of nail-biting, 2- Feelings of being neglected, 3-Any emotions that arise—crying, anger, sadness, or anxiety—let them be fully experienced.”

Therapist: “Your first assignment is to recall all the memories you have related to nail-biting, from childhood until now, along with the negative feelings such as being neglected. Do this twice a day, two sessions of ten minutes each. Remember the behaviors—how you bit your nails, where you did it, the anxiety you felt, the sadness, times when you were unnoticed or noticed, the criticisms and punishments. Let everything come up for ten minutes and fully experience the emotions. You can even cry—like now, when you were describing your feelings and got tearful. Feel sad, angry, let the tears come. You might feel a bit unsettled; that’s okay. Don’t suppress it. Do this twice daily at the scheduled times. If you said 3:30 and 9:00, stick to those times. If you miss the 3:30 session, move on to the next session. If you forget, skip it and do the next one—don’t stress. Even if thoughts or emotions arise spontaneously at other times, let them surface. If it happens again, or new memories, tears, or anger come up, don’t stop them. Let everything fully come up. Even if it makes you a little agitated or your behavior changes slightly, it’s fine. These are positive signs—they need to come up to be processed and released from within you. Very good. Now, tell me the exact times you will do your practice sessions”.

Client: “3:30 p.m. works, and 9:00 p.m. is good too. I really want to get better quickly”.

Therapist: “With your motivation, it’s definitely possible. Keep practicing until our next session. Good luck!”

### **Session Two Summary**

Therapist: “Welcome back. In our previous session, you were assigned to practice recalling your nail-biting memories twice a day. How did it go”?

Client: “The first time I practiced, I felt extremely anxious—my heart was racing, and I was breathing fast. The next few times, the anxiety decreased, but I felt very sad and cried. The problem was that only a few memories would come to mind”.

Therapist: “Can you describe exactly what you felt and what images came to your mind”?

Client: “At first, I thought about the moments when I used to bite my nails so harshly that they became deformed. I could almost feel the pain again—it made me feel awful. You know, one image that came up and really hurt me was that of a little girl—nervous, standing alone, withdrawn, and isolated. I felt sorry for her; it was a painful feeling”.

Therapist: “What emotions did that image bring up for you”?

Client: “A deep sense of loneliness and alienation—as if I wasn’t understood by anyone. When people said things like, ‘Stop it, look how ugly your nails are,’ I felt like I had to stop, but I just couldn’t”.

Therapist: “And how did that inability make you feel”?

Client: “I felt regretful. I kept thinking that if someone had paid attention to my anxiety as a child, I wouldn’t be like this now. When I thought about my mother’s behavior, I became angry”.

Therapist: “How did you experience or express that anger”?

Client: “At first, it was just anxiety, but gradually I started crying. For example, last night during the exercise, I cried a lot—especially because I remembered a time when my mother scolded me in the car for biting my nails”.

Therapist: “So your coping strategy was to do it secretly, to avoid shame”?

Client: “Exactly. I never did it in front of others. There’s something else too—I always felt like I was impossible to cure. I’ve had this problem for so many years that it feels like a part of who I am”.

Therapist: “Did this sense of hopelessness exist before you came here as well?”

Client: “Yes. I thought no one could help me. Maybe that’s why I waited so long to seek help”.

Therapist: “How many times did you do the exercises this past week”?

Client: “Some days I only did it once. I couldn’t manage to do it twice on any day”.

Therapist: “That’s okay. When did the crying start”?

Client: “From the second or third day. Last night, I cried a lot, but I tried to finish within the ten minutes”.

Therapist: “How was your nail-biting this week”?

Client: “It increased, especially because it’s exam period. That made me feel worse”.

Therapist: “That’s normal. In the early stages of treatment, these behaviors may intensify. This shows that your anxiety is surfacing, and we need to work with it.”

Homework Assignment for This Session Until the Next:

1-Continue not suppressing nail-biting.

2-Continue not suppressing any emotions throughout the day.

3-New exercise: Twice a day, focus on future anxieties (e.g., worry about exams).

4-Continue the previous exercise of reviewing past memories and nail-biting.

Client: “Got it. The new exercise is about future worries, and the previous one is about past memories”.

Therapist: “Exactly. In the new exercise, deliberately let your anxiety rise. Even if it feels unpleasant, that’s part of the treatment process”.

Client: “Can I also add 2:00 p.m.? So three times a day”?

Therapist: “If you can manage it, that’s great. If not, it’s okay”.

Client: “So the final schedule would be: 3:30 p.m. and 9:00 p.m. for past nail-biting memories, and 5:00 p.m. and 10:00 p.m. for future anxieties”.

Therapist: “Perfect. Keep following this schedule until our next session. Good luck!”

### **Session Three Summary**

Therapist: “Welcome. Tell me, how did you do your exercises since the last session”?

Client: “I did the exercises. How I felt during them depended on the thoughts that came up. Most of my emotions surfaced. When I thought about the past, I cried”.

Therapist: “Okay, so you’re talking about your first exercise—bringing up memories related to nail-biting. What came to your mind”?

Client: “Some old memories. For example, during my university entrance exam year, I went to a counselor. The counselor said I should feel comfortable and gradually share everything, but the only thing I wanted to

say was this topic, and I couldn't. I didn't say it because of shame. That came up in my mind again. Also, my father came to mind a lot—he never did anything for my anxiety”.

Therapist: “Did this cause you stress? Anxiety or shame”?

Client: “Shame. I wasn't comfortable with it. At the same time, I also felt anger—anger toward my father and even my mother for not understanding me”.

Therapist: “And how did that make you feel?”

Client: “I felt angry. I had a lot of anger this week. I was recalling old memories. During my university entrance exam period, I was anxious, and my mom and brother would say, ‘Why are you so anxious?’ That made me feel worse”.

Therapist: “So you became more anxious”?

Client: “Yes. I felt bad this week. Suddenly, my anxiety would spike”.

Therapist: “So different memories came up—both anger and stress. Whom were you mostly angry at”?

Client: “Mostly my father, who was inattentive, and my mother, who didn't understand me”.

Therapist: “And you experienced this anger intensely throughout the week. Did you cry a lot as well”?

Client: “Yes”.

Therapist: “Did you act out aggressively toward your parents”?

Client: “No, I tried not to”.

Therapist: “If you wanted to say something to your father, what would it be”?

Client: “I would say that you neglected me, you fell short of what I needed.” (cries)

Therapist: “Exactly. These are deep-seated wounds that you are reopening. Were the images clear to you”?

Client: “Yes, completely”.

Therapist: “Okay, now how did you do your second exercise”?

Client: “I imagined situations where I was very anxious about studying, and I deliberately brought up that anxiety. Imagining stressful academic scenarios, like getting stuck during an exam or receiving a low score, made me very anxious. I would think, ‘Imagine you know nothing and suddenly get stuck on questions, or your score turns out very bad.’ It made me really anxious.”

Therapist: “Was your anxiety the same every day”?

Client: “No, it depended on how I had studied”.

Therapist: “Did you ever tell yourself it's okay”?

Client: “Sometimes I'd say, ‘If my score is 18, it's okay.’ Part of me would agree, part of me wouldn't”.

Therapist: “That itself is progress. That part of you is growing stronger”.

Client: “Yes, sometimes I'd think, ‘What does it matter at university’”?

Therapist: “That's a sign of progress. The inner part of you that accepts is activating, even though it's still weak. Do you see? These exercises are affecting your perfectionism. That inner part that needs to be strong and accepting is starting to speak up. But it's still overpowered, and the exercises must continue”.

Client: “You're right”.

Therapist: “Good. Despite the difficulties, you did well. You need to continue so you can process more of your emotions”.

Client: “Yes, definitely. I'm motivated to continue”.

Therapist: “Your anxiety exercises should continue twice a day—think about exams, low scores, failing, anything that makes you anxious. At night, before sleep, let these thoughts come up. Once, when you sleep, let whatever comes up happen. You said anger was strong—once focus on anger toward your dad and mom. Another time, review nail-biting memories. Nail-biting memories can include anything you remember about it, plus frustration and anxiety. And don’t stop your nail-biting behavior—let it happen. So that’s four exercises: nail-biting memories (once), anger toward parents (once), anxiety and stress (twice). What times should these be?”

Client: “The same as before. Nail-biting memories at 2 PM, anger toward parents at 5 PM, anxiety and stress at 3 PM and 9 PM”.

Therapist: “Good. Keep doing these exercises until the next session. Well done.”

Therapist: “Welcome. Tell me, how did your exercises go?”

Client: “Regarding nail-biting memories, I thought my emotions wouldn’t come up anymore. At most, I got a little anxious. I didn’t cry, and the intensity of anxiety was much lower”.

Therapist: “What percentage of anxiety did you feel?”

Client: “About 30–40%”.

Therapist: “Was this related to the act of nail-biting itself or the memories?”

Client: “Mostly the nail-biting itself. The memories didn’t evoke any special feelings”.

Therapist: “How about anger and resentment?”

Client: “My heart rate went up, my breathing got faster. I realized it was anger. For example, I got upset with my dad for not noticing my anxiety at all”.

Therapist: “Did you cry?”

Client: “No, I mostly got angry”.

Therapist: “What about your anger toward your mother?”

Client: “It was increasing. I thought about things where she saw I was anxious but still scolded me. Even though I love her a lot, I tried to keep my anger around 40–50%”.

Therapist: “And toward your father?”

Client: “More, because he didn’t even notice”.

Therapist: “Very good. How did the exam-anxiety exercises go?”

Client: “I did them every day. My anxiety rose, sometimes up to 80%. I was very tense”.

Therapist: “Was there a difference between voluntary and involuntary anxiety?”

Client: “Yes. Voluntary exercises made it higher. I usually imagined failing the exam”.

Therapist: “Did you do it for ten days?”

Client: “Yes. The baseline anxiety was 60%, mostly 80%. At the weekend, it was higher because the exam was approaching.”

Therapist: “Look, you did your exercises really well. Some new and good things came up. Whatever, pardon me, when we eat food, spoiled things go into the stomach and harm it; similarly, in your mind and spirit, everything negative or ‘spoiled’ that you’ve internalized comes up. You have to let it come up—there’s no other way for you to feel better. Now, the anger and memories of your parents that you said reached 40–50%—do that once a day”.

Therapist: “Over this past week, how much have you been biting your nails?”

Client: "It's been intense because my stress is high. I didn't hold back".

Therapist: "Don't hold back. Now, also set aside two five-minute sessions for nail-biting. For example, sit at 12 o'clock and bite your nails for as long as you can, up to five minutes".

Client: "You mean I should really do that"?

Therapist: "As much as you can. Even a little is fine. Isn't that what you're already doing"?

Client: "Yes, I do, but it happens on its own".

Therapist: "Let it happen. Now sit deliberately, consciously, like you usually do unconsciously, and do it the same way, up to five minutes. That counts as two sessions of nail-biting".

Client: "If it's very short, is that okay"?

Therapist: "It's your exercise. You're doing it involuntarily anyway. Just make sure you try deliberately twice, even if a little or complete. At its most intense, it will be like the times you've been doing it for years".

Client: "Yes, definitely".

Therapist: "So your exercises will be: once daily anger toward your parents, twice daily anxiety exercises continue, you don't need to continue other memory exercises, and instead, twice daily nail-biting. That makes a total of five exercises per day. Very good. What times should these be"?

Client: "Same times as before work well. Nail-biting (2 PM and 9 PM) – anger toward parents (5 PM) – anxiety and stress (1 PM and 9 PM)."

Therapist: "Welcome. So, tell me, how did you do with your exercises"?

Client: "Well, there was the anxiety exercise, where I tried to increase my anxiety about exams and university".

Therapist: "What were you imagining"?

Client: "That I wouldn't know anything".

Therapist: "During your exercises, was the anxiety higher or outside the exercises"?

Client: "Even outside the exercises".

Therapist: "And now, how intense is it"?

Client: "Now when I push it up, the intensity reaches 50–60%".

Therapist: "So it's no longer at the 90–100% intensity you mentioned; it's lower. What else"?

Client: "Nail-biting. Something interesting for me was that it felt different, doctor. It felt very conscious, very deliberate, and almost difficult for me to do this behavior".

Therapist: "You mean it was hard to do it"?

Client: "Very hard, or maybe I just didn't feel like it".

Therapist: "Now, if you want to say, yesterday and today, how much did you bite your nails"?

Client: "Less. I felt maybe 30–40% less than before. I still did the behavior, but less".

Therapist: "Okay. And if you want to say, in these past two or three days, how many times per day did you do it"?

Client: "I did the exercises twice a day".

Therapist: "So you did it twice for the exercises, whether you could or not. And outside the exercises"?

Client: "Maybe two or three times. But I feel a little that the therapy is having an effect, and my perspective is slowly changing. I feel like I'm gaining control over this behavior".

Therapist: “Good, that’s a nice progress. Any other exercises”?

Client: “Anger toward my parents”.

Therapist: “How did the anger exercise toward your parents go?”

Client: “My anger toward my parents has also decreased a lot. Lately, I couldn’t raise it very high. It’s become harder for me”.

Therapist: “That’s good progress. Do you feel lighter now”?

Client: “Yes, much lighter. I feel better”.

Therapist: “Good, very good. You’ve worked hard. How about stress and anxiety”?

Client: “Interestingly, that’s decreased too; intensity is around 40%”.

Therapist: “Excellent. I think you’ve made good progress. Keep doing your exercises. You’re essentially self-therapizing, and I’m like your coach helping you raise yourself. You’ve become much more confident. Even in this session, your stress and anxiety are lower. You’re speaking more confidently. These are signs of your growth”.

Client: “Thank you very much. I also feel braver. I really appreciate it”.

Therapist: “Very good. You need to continue your exercises. Anger toward your parents: once a day, whenever it arises. Anxiety: once a day (stress, exam anxiety, future worries, whatever it is). Nail-biting: twice a day for one week, then once a day. What times will you do them”?

Client: “11 and 3 for nail-biting, 1 for anger, and 5 for stress and anxiety”.

Therapist: “Perfect. Continue this until the next session.”

Therapist: “Welcome. Tell me, how have things been since the last session”?

Client: “Doctor, everything went really well. Somehow I can’t bite my nails at all anymore. No matter what I try, I can’t. It’s like it’s in a completely new space that it’s never been in. It’s strange for me. For example, one of my nails that used to grow long and I’d bite—now I just can’t. I feel much better. My anxiety has decreased, and I’ve seen a lot of positive changes”.

Therapist: “How did the nail-biting exercise I asked you to do go”?

Client: “I did it twice a day, and the result was fascinating. I just couldn’t bite that nail anymore. It had reached a level where I literally couldn’t do it. I kept saying, I can’t believe it. I told everyone the treatment worked on me”.

Therapist: “Thank God. So you couldn’t bite, and it had decreased”?

Client: “Not at all”.

Therapist: “Not at all. And your nails have grown longer. You can see the white part of your nails now”.

Client: “Yes, before when I bit them, it wasn’t visible. Now I can refrain from biting, and if needed, I can trim them with a nail clipper”.

Therapist: “Very good. How about the anger toward your parents”?

Client: “That decreased too. I thought about my anxieties and asked why, for example, they ignored me. My anger toward my father was more, toward my mother less because my father had been largely inattentive. Overall, my anger was about 10%. I hardly experienced it anymore. I feel calmer, happier, and more confident”.

Therapist: “So nothing is bothering you now”?

Client: “No, really. I feel great and I’m happy that after years I finally can control my nails”.

Therapist: “It seems the treatment has achieved its goals, both for nail-biting and your anxiety and mood. The exercises will continue for four weeks: for the first two weeks, nail-biting once every other day and anxiety twice, then after two weeks, continue every other day, one session each for two more weeks. After that, exercises will be stopped until the next follow-up session.”

### **Follow-up Session 1 (After Two Months)**

Therapist: “Welcome. It’s been two months since our last session. In the previous session, you reported that the treatment was progressing well: you couldn’t bite your nails, the behavior had decreased, and your anger toward your parents had reduced to 10%. That was your last session’s report. How is your nail-biting now”?

Client: “Not at all, Doctor. I can’t bite them anymore, neither during exercises nor outside of them”.

Therapist: “Not even outside of the exercises”?

Client: “No. Now, if I want to bite my nails, I’d have to use nail clippers. I can’t do it myself easily anymore”.

Therapist: “Very good. It seems you’ve had multi-step progress. These are signs of the treatment working. You’ve reached the stage where it’s normalized”.

Client: “Exactly. My nails are completely aligned now. Look at my hands”.

Therapist: “Congratulations, this is the result of your own effort”.

Client: “Really, thank you so much. It’s like a miracle. Besides this, I can communicate with others more confidently using body language. I feel much better now because my nails grow out properly instead of being deformed”.

Therapist: “Thank God. So your self-confidence has increased and your shame has decreased”.

Client: “Yes, a lot. Overall, I feel it has impacted different aspects of my life. I feel calmer too”.

Therapist: “Very good. How about anger and resentment toward your parents”?

Client: “That’s resolved too, Doctor. For example, when I see my dad, I feel love for him, I go and hug him, and that anger is gone. Even looking back at the past, I tell myself that what they did is natural and I don’t get angry anymore”.

Therapist: “That’s wonderful. Excellent. I’m glad you reached this stage”.

Therapist: “So overall, you’ve made excellent progress. Multiple aspects of treatment have improved”.

Therapist: “Has your stress decreased”?

Client: “Much less now, maybe around 15–20% if I experience it”.

Therapist: “Good. And this is all your effort, your perseverance. Our sessions are now complete. From a treatment perspective, we’ve achieved our goals. I consider the treatment successful. We will have another follow-up session, but in the meantime, if any symptoms return or persist and become troublesome, you know how to manage them and can apply the same exercises on your own. Good luck.”

### **Follow-up Session 2 (After Six Months)**

The results from the six-month follow-up session indicated that the effects of the treatment had been stable and well-maintained. The client reported 90% satisfaction with improvements in nail-biting behavior and 80% satisfaction regarding anxiety and stress. This demonstrates that the paradoxical therapy, applied

through an analytical approach, was effective in addressing both nail-biting behaviors and anxiety symptoms.

## Findings and Results

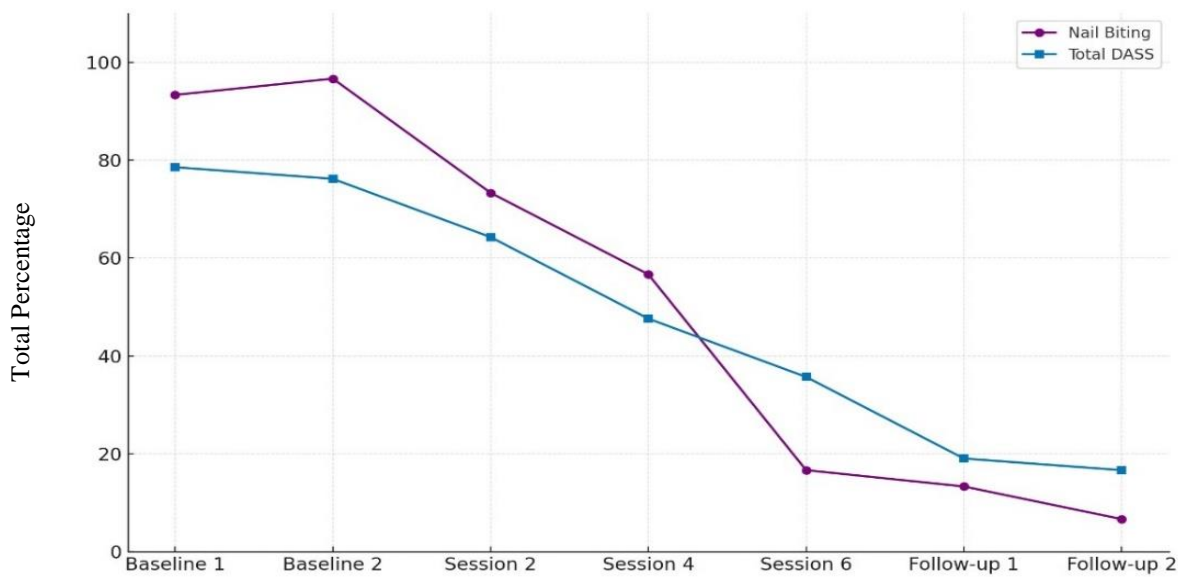
The results from the initial assessments indicated a high severity of nail-biting behavior and notable emotional symptoms in the client. The client's score on the Nail-Biting Severity Scale was 28 at the first baseline and 29 at the second baseline. At this stage, scores on the DASS-21 questionnaire across the three subscales—depression, anxiety, and stress—were 13, 20, and 20, respectively, with a total score calculated from the sum of depression and anxiety ( $\times 2$ ) of 66. At the second baseline, these scores were 12, 20, 19, with a total score of 64. During the course of treatment, the measures showed progressive improvement. In the second session, nail-biting and DASS scores were 22, 10, 17, 18, with a total score of 54. By the fourth session, these scores decreased to 17, 8, 12, 15, with a total of 40. In the sixth session, nail-biting scored 12, and DASS scores were 7, 8, and 8, with a total of 30. Follow-up assessments confirmed the stability of treatment effects. At the two-month follow-up, scores further reduced to 4, 2, 6, 4, with a total of 16, and at the six-month follow-up, scores were 2, 2, 5, 3, with a total of 14. These results indicate a continuous reduction in the severity of nail-biting behavior and associated emotional symptoms, suggesting sustained improvement over time. Table 1 presents the detailed scores for nail-biting severity and the depression, anxiety, and stress subscales of DASS-21.

Findings represent the outcomes of the study. In quantitative research, they typically include the distribution of demographic characteristics of the sample group, as well as descriptive and analytical results of the variables under investigation. In qualitative research, findings are presented in the form of categories, concepts, or main themes along with their subcategories, often illustrated with direct quotations from participants or primary data.

**Table 1. Scores on Nail-Biting Severity and Depression, Anxiety, and Stress (DASS)**

Session	Nail-Biting Severity	Nail-Biting Percentage	Depression, Anxiety, Stress	Depression, Anxiety, Stress Percentage
Baseline 1	28	94%	66	78%
Baseline 2	29	98%	64	76%
Intervention Session 2	22	77%	54	65%
Intervention Session 4	17	58%	40	48%
Intervention Session 6	12	18%	30	35%
Follow-up months 1 (2 months)	4	16%	16	19%
Follow-up 2 (6 months)	2	14%	14	17%

As shown in Table 1, the scores obtained from the Nail-Biting Severity Scale and the DASS-21 questionnaire are presented across two baseline measurements, intervention sessions, and the follow-up period. These data indicate a decreasing trend in both emotional symptoms and nail-biting behavior throughout the course of treatment. The significant reduction in scores on both measures reflects the effectiveness of the intervention in alleviating emotional distress and modifying the maladaptive nail-biting behavior in the participant. This pattern of change is illustrated in Figure 1.

**Figure 1. Trend of Nail-Biting Severity and Emotional Distress Scores Over Time.**

As shown in Figure 1, the scores for nail-biting severity as well as the total DASS score (depression, anxiety, stress) demonstrated a notable decrease across the intervention sessions and follow-up periods. This downward trend reflects the effectiveness of the intervention in reducing the participant's emotional and behavioral symptoms.

**Table 2. Effect size results of Psychoanalytic Paradoxical Therapy on nail-biting severity and DASS scores at baseline, intervention, and follow-up stages**

Participant	Statistical Index	Nail-Biting Severity	Depression, Anxiety, and Stress (DASS)
Client BC	Baseline Mean (SD)	28.5 (0.71)	52.50 (0.71)
	Intervention Mean	17.00 (5.00)	33.50 (10.54)
	Follow-up Mean	3.00 (1.41)	13.00 (1.41)
	Intervention Phase Effect Size	Cohen's $d = 3.22$ - effect-size $r = 0.85$	Cohen's $d = 2.61$ - effect-size $r = 0.79$
	Follow-up Phase Effect Size	Cohen's $d = 22.81$ - effect-size $r = 1.00$	Cohen's $d = 35.33$ - effect-size $r = 1.00$

As shown in Table 2, the participant's scores on the nail-biting severity scale and the depression, anxiety, and stress subscales were recorded across three assessment phases (baseline, intervention period, and follow-up). The marked reduction in scores across all four measures indicates significant improvement in the participant's emotional and behavioral symptoms throughout the treatment. Moreover, the sustained decrease in scores during the follow-up phase reflects the durability of the intervention's effectiveness and the maintenance of therapeutic gains over time.

#### Evaluation of Treatment Outcomes and Follow-Up

The psychotherapeutic intervention based on the Psychoanalytic Paradoxical Therapy approach for Ms. BC, targeting the reduction of nail-biting behavior and emotional symptoms, was conducted over six sessions totaling 150 minutes across a two-and-a-half-month period. Treatment evaluations indicated that the severity of nail-biting decreased by approximately 58% compared to the baseline mean at the end of the intervention. Similarly, the total score on the DASS-21 showed a reduction of about 43%, reflecting significant improvement in the participant's emotional symptoms. Follow-up assessments at two and six

months confirmed the stability of these changes. Nail-biting severity decreased by 86% and 93%, and the total DASS score decreased by 70% and 73%, respectively, relative to the baseline mean. These findings demonstrate the efficacy and durability of the Psychoanalytic Paradoxical Therapy in improving both behavioral and emotional symptoms.

## Discussion and Conclusion

The psychotherapeutic intervention implemented in this study, based on the Psychoanalytic Paradoxical Therapy model, demonstrated that even in chronic conditions such as nail-biting accompanied by high anxiety, significant clinical improvements can be achieved over a short period using experiential and psychoanalytic mechanisms. Across six treatment sessions and two follow-up sessions, the long-standing behavioral symptom of nail-biting, which had been entrenched in the participant's psychological and functional patterns for years, was completely eliminated. The participant also showed a meaningful reduction in anxiety, while suppressed anger toward parents was gradually recognized, processed, and modulated. These rapid and stable therapeutic changes highlight the foundational components of the Psychoanalytic Paradoxical Therapy model, including "directive-scripting" and "artificialization," decoupling the symptom from associated anxiety, altering the meaning of the symptom, and ultimately reinforcing the "self" (40).

These findings align with previous research. Prior studies on nail-biting indicate that increasing awareness and mindfulness of the behavior is one of the most effective strategies for managing this disorder. Emotional support and encouragement are key therapeutic tools, whereas criticism and punishment often have no positive effect and should be avoided (41, 42). In the present study, the participant was allowed, within the prescribed exercises, to experience the symptoms without shame or anxiety and to engage with them consciously.

Maraz, Hende (21) also reported that feelings of shame and guilt can lead to significant psychological distress in individuals with psychiatric disorders. Additionally, previous research has demonstrated that Habit Reversal Training (HRT) is a structured behavioral intervention that has been shown effective in multiple studies, leading to increased nail length and reduced frequency of nail-biting compared to control groups (24, 43). Unlike HRT, which directly targets habit change, the Psychoanalytic Paradoxical Therapy model achieves change indirectly and paradoxically: the individual is instructed to continue the problematic behavior without interference.

In this study, the participant was asked to fully reconstruct the nail-biting behavior. The goal was a voluntary, purposeful reconstruction of experiences that were previously automatic, intrusive, and negatively charged. This process represents both "directive-scripting," as the previously automatic behavior is now performed intentionally under the therapist's guidance in a safe and predictable setting, and "artificialization," as the participant consciously enacts the symptom and experiences a controlled form of associated anxiety and maladaptive behavior (29, 34). This mechanism, combined with the principle of direct symptom prescription and consistent execution of paradoxical tasks, facilitates the reduction or elimination of anxiety linked to performing the task and enhances the safe, controlled reconstruction of symptoms.

The participant reported full adherence to the therapist's instructions and successfully completed the exercises. Although the reconstructed behaviors superficially resembled previous nail-biting, their

emotional content differed significantly in both intensity and quality. The participant stated: "Everything went really well, doctor. I can't even bite my nails anymore. No matter what I do, it just doesn't happen. It's like it's gone to a completely new space that never existed before. I feel so much better. My anxiety has decreased, and I've noticed many positive changes". This report indicates that the reconstructed behaviors no longer carry the previous emotional and anxiety load, and their reoccurrence does not provoke intense arousal—demonstrating the activation of the second PTC mechanism: decoupling the symptom from anxiety. In summary, this study supports the efficacy of PTC-based interventions in producing rapid, significant, and lasting improvements in chronic nail-biting and associated emotional symptoms, offering a promising complementary approach alongside established behavioral techniques such as HRT.

Additionally, dysregulation of emotions is another contributing factor in the development of psychological disorders. Emotion regulation-based therapies, such as Dialectical Behavior Therapy (DBT) and Emotional Freedom Techniques (EFT), employ skills training in mindfulness and emotional regulation to help reduce habitual stress-related behaviors. Practices such as meditation, deep breathing, and progressive muscle relaxation have also been shown to effectively reduce tension and anxiety. These techniques, by increasing moment-to-moment awareness of the body and mind, contribute to the automaticity of nail-biting behavior being diminished (44).

Emotions such as anxiety, tension, and even shame are a natural part of the experiences associated with performance and social interactions in individuals with anxiety and obsessive-compulsive disorders (45). Due to the heightened cognitive sensitivity of these individuals to negative evaluation and judgment by others, such emotions can intensify in social contexts and may lead to avoidance and safety behaviors, ultimately perpetuating the disorder (46). In cases of chronic nail-biting accompanied by anxiety, however, anxiety, tension, and shame can become heightened and functionally impairing (15).

When the link between the nail-biting behavior and its associated negative emotions is severed, the behavior no longer feels compulsory or distressing, and the individual can engage with it with greater control and agency. This enables them to manage or even eliminate its occurrence in daily life without experiencing intense anxiety. In the therapeutic sessions, the participant reported:

*"I used to do this twice a day, and the result was really interesting for me. I simply couldn't bite that nail anymore. It reached a level where I absolutely could not do it. I kept saying I can't believe it. I was telling everyone that the therapy really worked for me."*

This experience indicates that the distressing behavior had lost its emotional charge and the individual had gained a higher degree of control over it. In this approach, the goal is not to suppress emotions but to structure exposure to them within defined conditions, allowing the individual to experientially test the harmlessness of the symptom (30, 31, 34).

Although some studies have indicated that when individuals hold distorted beliefs and thoughts about their behavior and nail-biting, Cognitive-Behavioral Therapy (CBT) can be highly effective in controlling the anxiety underlying nail-biting (47), helping individuals identify, challenge, and replace maladaptive cognitions, the Paradoxical Therapy (PTC) model focuses not on cognitive change but on altering emotional experience and behavior. Through the regular repetition of paradoxical assignments and repeated exposure to behavioral cues in a safe and controlled environment, the client gradually realizes that these cues no longer carry the same threat or vulnerability as before. Continuation of these assignments provides repeated

opportunities to re-test the safety of the cues, thereby modifying the individual's prior semantic framework associated with them. Unlike cognitive approaches, which emphasize direct restructuring of beliefs, in the Paradoxical Therapy (PTC) model, this transformation occurs through experiential engagement and targeted exposure. By prescribing the exact behavioral cues, their meaning in the client's mind shifts from a threatening stimulus to a manageable and low-risk experience; this initial semantic change reduces anxiety and facilitates the smoother execution of therapeutic tasks. Repeated engagement with paradoxical tasks further consolidates and stabilizes this shift in meaning. For instance, the client reported:

Now, if I want to bite my nails, I have to use nail clippers; I simply can't do it easily myself. My nails are completely even now. I can speak in front of others with my body language much more confidently. I feel much better overall. I feel that it has positively impacted various aspects of my life. Overall, I also feel calmer". This description demonstrates that the previously disruptive cue has transformed into a controllable and manageable experience in the client's daily life (30, 33, 48). Essentially, this approach helps the patient neutralize psychological defenses and strengthen self-confidence through mastery over the cues (35, 48).

In line with this, Tahernejad Javazm, Besharat (49) found that paradoxical therapy effectively influenced markers of ego-strength, self-awareness, and levels of depression, anxiety, and stress. Marashi, Nicholson (50) also concluded that paradoxical scheduling impacts psychological disturbances such as stress, anxiety, and depression. Jahanpanah (51) examined the effectiveness of paradoxical therapy on complicated grief symptoms in women and reported its efficacy. Li and Shi (52) similarly found that designing paradoxical programs can positively affect psychological well-being.

In the Paradoxical Therapy model, the ultimate goal of therapy is to strengthen and consolidate the ego ("self"), as ego weakness in the face of internal conflicts and external pressures predisposes individuals to the formation and maintenance of psychological disorders (31). Mental health is established when the ego occupies the apex of the personality triangle and can effectively monitor and regulate the conflicts between the id and superego. Conversely, misalignment of the ego with either or both poles disrupts psychological equilibrium, leading to instability and psychopathology (30).

The process of strengthening the ego in Paradoxical Therapy (PTC) begins from the very first session. By prescribing direct exposure to behavioral cues and designing paradoxical tasks, targeted anxiety reduction is achieved, and the client is confronted with the cues in a safe and predictable setting. This controlled exposure guarantees experiences of mastery over the cues, thereby shifting the balance of power in favor of the ego. Repetition of these exposures consolidates the authority of the ego and enhances its capacity to manage emotions and internal conflicts. Clinical evidence indicates that this model, with shorter intervention duration, higher success rates, and lower relapse, can be particularly effective in treating disorders such as anxiety and nail-biting. Ultimately, the goal of Psychoanalytic Paradoxical Therapy extends beyond mere symptom reduction; it aims to restore the ego to a position where it can independently regulate emotions and conflicts while maintaining the stability of therapeutic change (30). Furthermore, Peluso and Freund (53) demonstrated that paradoxical therapy plays a significant role in enhancing individual well-being.

The findings of this study indicate that the Psychoanalytic Paradoxical Therapy model, relying on foundational, experiential, and emotion-focused mechanisms, can induce profound, stable, and meaningful clinical changes within a remarkably short period. Through the implementation of a structured framework, paradoxical assignments, and direct cue exposure, this approach provides a targeted and controlled

encounter with emotional stimuli. Consequently, the association between behavioral cues and anxiety is disrupted, the subjective meaning of these cues is transformed, and the ego (“self”) becomes stronger and more resilient against internal and external pressures (30, 32, 33, 48, 54).

The application of this model demonstrated that even in chronic and deeply rooted problems, significant improvements can be achieved without long-term interventions or complex techniques, with effects that are not only observable in the short term but also sustained in subsequent follow-ups (29). The simplicity of implementation, clarity of structure, rapid effectiveness, and adaptability to diverse clinical issues make the Psychoanalytic Paradoxical Therapy model a valuable and practical option for short-term, experiential, client-centered interventions.

Among the limitations of this study are its single-case design, which restricts the generalizability of the findings, and the absence of a control group to compare efficacy with alternative treatment approaches. Reliance on self-reports and therapist judgment also increases the potential for bias, and a six-month follow-up may not provide a comprehensive picture of the long-term durability of the outcomes. Therefore, future research is recommended to employ randomized controlled trial designs with larger and more diverse samples, along with longer follow-up periods (at least 12 months) and investigation of potential underlying mechanisms of change, such as the transformation of cue meaning or strengthening of the ego. Such studies could enhance the validity of findings and deepen understanding of the processes driving therapeutic change.

### **Acknowledgments**

This study would not have been possible without the valuable participation of the client. The authors sincerely express their gratitude and appreciation.

### **Authors' Contributions**

All authors equally contributed to this study.

### **Declaration of Interest**

The authors of this article declared no conflict of interest.

### **Ethical Considerations**

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

### **Transparency of Data**

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

### **Funding**

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

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