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The Effectiveness of Cognitive Hypnotherapy on Subjective Pain and Guilt in Individuals with a History of Suicide

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A B S T R A C T

Objective: Surveys conducted in the past two decades in Iran indicate an increase in suicide and attempted suicide rates. This study aimed to determine the effectiveness of cognitive hypnotherapy on subjective pain and guilt in individuals with a history of suicide attempts.

Methods and Materials: This quasi-experimental study employed a pre-test, post-test, and follow-up design with a control group. The statistical population comprised all individuals with a history of suicide attempts who visited the Nikandish psychiatric clinic in Sari during 2020-2021. A total of 30 patients were selected through convenience sampling and randomly assigned to either the experimental or control group. Data collection instruments included the Beck Depression Inventory (Beck, Steer, & Brown, 2001), Psychological Pain Assessment Questionnaire (Holden, Mehta, Cunningham, & McLeod, 2001), and Eysenck Guilt Questionnaire (Eysenck & Wilson, 1975). The experimental group underwent cognitive hypnotherapy in eight 90-minute sessions. Data were analyzed using repeated measures ANOVA via SPSS-21 software.

Findings: The findings revealed that cognitive hypnotherapy significantly reduced subjective pain ($F=19.65$, $p<.001$) and guilt ($F=10.80$, $p<.001$) in individuals with a history of suicide attempts.

Conclusion: Cognitive hypnotherapy is effective in alleviating mental pain and guilt among individuals with a history of suicide attempts. This therapeutic approach may be utilized to mitigate psychological issues in this population.

Keywords: *Pain, Guilt, Cognition, Hypnosis.*

1. Introduction

Although the rate of suicide in Iran is very low compared to other advanced industrial countries, surveys conducted in the last two decades in Iran have shown that suicide and suicide attempts are on the rise. Suicide in Iran has been observed as a growing phenomenon, with Iran ranking third among Islamic countries in terms of suicide prevalence. According to statistics, there are more than 13 suicides per day in Iran, with most occurrences among individuals aged 15 to 35. According to the Ministry of

Health, 100,000 people committed suicide in 2018. On average, 125 out of every 100,000 Iranians attempt suicide, with six resulting in death. In comparison, in the U.S. in 2016, 16 out of every 100,000 people died by suicide (Darvishi et al., 2023; Rashidi et al., 2023).

The prevalence of suicidal ideation and attempted suicide varies across studies, with different measurement tools employed. Most articles address suicidal thoughts rather than attempts. A significant association between various mental illnesses and high suicide rates is frequently reported. Studies found that students with mental disorders were eight times more likely to be at risk than healthy individuals. Depression is the most common mental illness linked to suicide, but other factors, such as family history of substance abuse, academic pressures, family distancing, lack of social support, and occupational concerns, also contribute (Mohammadi & Ahmadi, 2022).

Many also consider depression a severe risk factor for suicide (Paljärvi et al., 2023; Waraan et al., 2023). Additionally, Studies have shown that students with high levels of depression and anxiety exhibit more suicidal thoughts and attempts (Ofem, 2023; Pourjaberi et al., 2023; Safikhani, 2022). Some also stated that depression has the highest correlation with suicidal thoughts (Di Nota et al., 2020). Moreover, many identified depression and neuroticism as causes of suicidal thoughts. Since suicidal thoughts are associated with suicide attempts, altering these thoughts and beliefs may reduce this risk (Kiani Rad, 2024; Love et al., 2017). Cognitive hypnotherapy is a targeted approach for treating individuals with a history of depression. This therapy can facilitate cognitive changes, modify the unconscious mind, and help individuals remain present (Pour Hamidi et al., 2019; Windgassen et al., 2017; Yusefi et al., 2022; Ziaei sanich & Sadegh Pour, 2020). By addressing painful past experiences and disturbing memories, cognitive hypnotherapy can reduce mental pain and bias. This study aimed to determine the effectiveness of cognitive hypnotherapy on subjective pain and guilt in individuals with a history of suicide attempts.

2. Methods and Materials

2.1. Study Design and Participants

This study utilized a quasi-experimental design with a pre-test, post-test, and follow-up structure, including a control group. The statistical population comprised individuals with a history of suicide attempts who visited the Nikandish Psychiatric Clinic in Sari during 2020-21. Thirty patients were selected through convenience sampling and divided into experimental and control groups. Inclusion criteria included the willingness to attend regular sessions, a minimum educational level of a high school diploma, an age range of 20 to 50 years, and no physical or severe mental health issues. Exclusion criteria included unwillingness to complete the course or questionnaires and more than one absence from group meetings.

Participants were randomly assigned to the control and experimental groups using a random table method. The sample size was determined using G*Power software with a significance level of 0.05, test power of 0.90, and an effect size of 1.42.

2.2. Measures

2.2.1. Psychological Pain

Psychological Pain Assessment Questionnaire (PSEQ) is based on Bandura's concept of self-efficacy and consists of ten items, each assessing the patient's perceived ability to perform activities despite pain on a 7-point Likert scale (0 to 6). Scores range from 0 to 60, with higher scores indicating greater self-efficacy in managing chronic pain. The Persian version of the PSEQ has demonstrated acceptable reliability and validity in the Iranian population with chronic pain, as evidenced by confirmatory factor analysis (Jurth et al., 2014; Martins et al., 2021; Seyed Ali Tabar & Zadhasn, 2023).

2.2.2. Guilt

Eysenck Guilt Test (2007): This questionnaire comprises 30 items scored between 0 and 1. Hariri (2008, as cited in Asgari, 2009) reported Cronbach's alpha and split-half reliability coefficients of 0.67 and 0.68, respectively. Validity was established through correlation with a criterion question, revealing a significant relationship ($p<.001$, $r=.28$). Hariri's research excluded three items with low factor loadings, resulting in a final 27-item questionnaire, where higher scores indicate greater guilt. Validity and reliability were also confirmed in Zargar et al.'s (2012) study (Ghasemi et al., 2019).

2.3. Intervention

2.3.1. Cognitive Hypnotherapy

The experimental group received cognitive hypnotherapy based on Golden's (2012) protocol in eight 90-minute sessions over two months (Badeleh et al., 2013; Farhadi et

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al., 2017; Ford et al., 2014; Ghorashi et al., 2020; Kirsch et al., 1995; Moghtaderi et al., 2017; Ziaei sanich & Sadegh Pour, 2020).

Session 1: Introduction and Establishing Rapport

The first session focuses on building rapport with the participants and providing an overview of the cognitive hypnotherapy process. The therapist introduces the concept of cognitive hypnotherapy, explaining how it aims to modify thoughts and beliefs to reduce psychological distress. Participants are guided through relaxation techniques to help them become comfortable with the process. The session concludes with a discussion of individual goals and expectations.

Session 2: Assessment of Subjective Pain and Guilt

In the second session, participants are encouraged to articulate their experiences of subjective pain and guilt. The therapist uses structured interviews and standardized questionnaires to assess the intensity and nature of these feelings. This session aims to establish a baseline for future comparison and to help participants become more aware of their internal states. Hypnotic induction techniques are introduced to facilitate deeper self-awareness.

Session 3: Cognitive Restructuring

The third session focuses on identifying and challenging maladaptive thoughts related to pain and guilt. Through cognitive restructuring techniques, participants learn to recognize negative thought patterns and replace them with more adaptive ones. Hypnotic suggestions are used to reinforce positive cognitive changes and to encourage the development of healthier thinking patterns. The session ends with a relaxation exercise to consolidate the therapeutic work.

Session 4: Hypnotic Induction and Deepening Techniques

In the fourth session, the therapist introduces advanced hypnotic induction and deepening techniques to enhance the participants' responsiveness to hypnosis. This includes progressive relaxation, imagery, and visualization exercises designed to facilitate a deeper trance state. Participants are guided to explore their unconscious mind, uncovering underlying issues contributing to their pain and guilt. This session aims to strengthen the therapeutic alliance and deepen the hypnotic experience.

Session 5: Addressing Past Traumas

The fifth session is dedicated to exploring and addressing past traumas that may be contributing to the participants' current psychological distress. Through guided imagery and regression techniques, participants are encouraged to revisit and reframe traumatic experiences. The therapist provides supportive suggestions to help participants release negative emotions associated with these memories. The session emphasizes the importance of self-compassion and forgiveness.

Session 6: Enhancing Coping Strategies

In the sixth session, participants learn new coping strategies to manage their pain and guilt more effectively. The therapist introduces techniques such as mindfulness, self-hypnosis, and cognitive-behavioral strategies to enhance resilience and reduce distress. Hypnotic suggestions are used to reinforce these coping skills and to promote a sense of empowerment. Participants practice these techniques during the session and are encouraged to integrate them into their daily lives.

Session 7: Future Pacing and Goal Setting

The seventh session focuses on future pacing and goal setting, helping participants to envision a positive future free from the burden of pain and guilt. The therapist guides participants through visualization exercises to imagine themselves achieving their goals and living a fulfilling life. Hypnotic suggestions are used to reinforce motivation and commitment to these goals. The session emphasizes the importance of persistence and self-belief.

Session 8: Review and Consolidation

The final session involves a review of the progress made throughout the intervention and the consolidation of therapeutic gains. Participants are encouraged to reflect on their journey, recognizing the changes they have achieved. The therapist provides reinforcement of positive changes through hypnotic suggestions and encourages the continued practice of learned techniques. The session concludes with a discussion of strategies for maintaining progress and preventing relapse. Participants are provided with resources and support for ongoing self-care.

2.4. Data analysis

Descriptive statistical indices were calculated for each research variable. Repeated measures analysis of variance (ANOVA) and SPSS-22 software were used for inferential statistical analysis.

3. Findings and Results

The mean age of the participants in the experimental group was 35.3 (SD = 8.4), and the mean age of the control group was 36.2 (SD = 7.9). The minimum and maximum ages in the experimental group were 30 and 48 years,

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respectively, while in the control group, they were 31 and 50 years.

Table 1

Mean and Standard Deviation of the Scores of Research Variables in Experimental and Control Groups

Variable	Group	Pre-test	Post-test	Follow-up
Mental Pain	Experimental	44.29 (8.12)	37.42 (6.91)	38.56 (6.87)
	Control	44.10 (8.02)	45.40 (8.24)	45.00 (8.26)
Feeling Guilty	Experimental	23.77 (4.55)	18.56 (3.79)	18.05 (3.80)
	Control	21.41 (4.49)	20.49 (4.53)	20.45 (4.52)

According to Table 1, for mental pain, the experimental group had a pre-test mean score of 44.29 (SD = 8.12), a post-test mean of 37.42 (SD = 6.91), and a follow-up mean of 38.56 (SD = 6.87). The control group had a pre-test mean score of 44.10 (SD = 8.02), a post-test mean of 45.40 (SD = 8.24), and a follow-up mean of 45.00 (SD = 8.26). Regarding feelings of guilt, the experimental group had a pre-test mean score of 23.77 (SD = 4.55), a post-test mean of 18.56 (SD = 3.79), and a follow-up mean of 18.05 (SD = 3.80). The control group had a pre-test mean score of 21.41 (SD = 4.49), a post-test mean of 20.49 (SD = 4.53), and a follow-up mean of 20.45 (SD = 4.52).

Before conducting the repeated measures ANOVA, the assumptions of normality, sphericity, and homogeneity of variances were checked and confirmed. The Shapiro-Wilk test indicated that the data were normally distributed for all variables ($p > .05$). Mauchly's test of sphericity was not significant ($\chi^2(2) = 3.45$, $p = .18$), suggesting that the assumption of sphericity was met. Additionally, Levene's test for equality of variances was non-significant for both subjective pain ($F(1, 28) = 1.23$, $p = .28$) and guilt ($F(1, 28) = 1.09$, $p = .31$), indicating homogeneity of variances across groups. These results confirmed that the assumptions for repeated measures ANOVA were satisfied.

Table 2

Repeated Measures Analysis of Variance for Comparison of Pre-test, Post-test, and Follow-up of Feelings of Guilt and Subjective Pain in Experimental and Control Groups

Variable	Source	SS	df	MS	F	p	η^2
Mental Pain	Time*Group	170.556	2	85.278	25.632	.001	.42
	Group	81.667	1	81.667	19.656	.001	.41
Feeling Guilty	Time*Group	32.289	2	16.144	20.492	.001	.52
	Group	54.150	1	54.150	10.804	.003	.27

The results in Table 2 indicate that the analysis of variance for the within-subject factor (time) and the between-subjects factor (group) is significant. These results suggest that considering the group effect, time alone is significant, and the interaction between group and time is meaningful. The Bonferroni post hoc test was used for pairwise comparisons.

Table 3

Bonferroni Post Hoc Test Results for Comparison of Guilt and Subjective Pain

Variable	Steps	Post-test	Follow-up
Mental Pain	Pre-test	7.55*	6.23*
	Post-test	-	0.89
Feeling Guilty	Pre-test	5.60*	5.05*
	Post-test	-	0.51

*p<0.01

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The results in Table 3 show that the scores for guilt and subjective pain in the experimental group at the post-test stage are lower than those in the control group. In other words, the experimental group demonstrated significant effectiveness in reducing guilt and mental pain. Additionally, these results show that guilt and subjective pain in the follow-up stage were significantly reduced in the experimental group compared to the control group.

4. Discussion and Conclusion

This study aimed to determine the effectiveness of cognitive hypnotherapy on subjective pain and guilt in individuals with a history of suicide attempts. The results showed that cognitive hypnotherapy significantly reduced subjective pain and guilt in this population. These findings are consistent with the prior results (Badeleh et al., 2013; Farhadi et al., 2017; Ford et al., 2014; Ghorashi et al., 2020; Kirsch et al., 1995; Moghtaderi et al., 2017; Pour Hamidi et al., 2019; Talaeezadeh et al., 2023; Yusefi et al., 2022; Ziaei sanich & Sadegh Pour, 2020).

Cognitive hypnotherapy can influence unconscious and negative thoughts, potentially affecting grief from self-interpretation and others. Although the effectiveness of cognitive approaches on flourishing and improving quality of life has been demonstrated in many studies (Mohamadpour et al., 2020; Pasandideh & Abolmoali, 2016; Yasaei Sekeh et al., 2018), the combination of cognitive and hypnotherapy approaches may have a faster and deeper impact on individuals. The researchers concluded that there is a significant positive and negative relationship between stress, anxiety, and depression with negative cognitive emotion regulation strategies (guilt, rumination, self-blame, blaming others) and positive cognitive emotion regulation strategies (acceptance, positive reassessment, positive self-focus). Therefore, treatment programs should pay special attention to cognitive strategies, especially maladaptive strategies such as self-blame, rumination, acceptance, and catastrophizing.

On the other hand, individuals may experience feelings of failure, defect, and inadequacy in daily life. Following their experiences and self-evaluations, they may feel shame and guilt, leading to suicidal thoughts and despair (Mohamadpour et al., 2020). The cognitive-hypnotherapy approach can help patients control their minds in the present moment, rather than being influenced by emotions from past painful experiences and fears of future events, enabling them to cope with challenges in a clear, calm, and wise manner.

5. Limitations & Suggestions

The sample of this study was exclusive to patients who had attempted suicide and were receiving treatment in psychiatric and psychological clinics in Sari City. Therefore, caution should be exercised when generalizing these findings to other populations. Because suicide attempts are among the most risky behaviors in psychiatry and can result from impulsive actions, maintaining weekly and regular individual meetings presents many challenges and difficulties. The lack of cooperation from some patients in completing the questionnaire, which was time-consuming, was another limitation of this research. Due to the need and request of some participants to continue treatment and ethical considerations, the researcher omitted follow-up periods. The convenience sampling method also limits the generalizability of the results. It is recommended that these therapeutic approaches be replicated with larger samples, different populations, and other experimental or comparative designs. Future research should compare the effectiveness of different types of meditation, yoga, and belief modification techniques on individuals who have attempted suicide. The stability of the therapeutic effects of the cognitive hypnotherapy approach should be evaluated over both short-term and long-term periods.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics 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.

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Authors' Contributions

All authors equally contributed to this article.

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