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Comparing the Effectiveness Intensive Short Term Dynamic Psychotherapy and Mindfulness-Based Cognitive Therapy on Emotional Cognitive Regulation in Patients with Chronic Pain

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Abstract: Living with chronic pain imposes a significant emotional burden, diminishing a person's emotional and cognitive abilities. Consequently, this research aimed to compare the impact of Intensive Short-Term Dynamic Psychotherapy (ISTDP) and Mindfulness-Based Cognitive Therapy(MBCT) on emotional cognitive regulation among chronic pain patients, with a two-month follow-up period. The clinical trial study was conducted in 2022 at the specialty and physiotherapy clinic of Imam Reza (AS) Hospital in Islamshahr City, Iran. Participants with chronic pain were selected through purposive accessible sampling and randomly assigned to three groups: ISTDP group, MBCT group, and a control group, each consisting of 15 individuals. To gather data, the Cognitive Emotion Regulation Questionnaire (CERQ) by Garnevsky et al. (2002) was employed. The results indicated that both ISTDP and MBCT led to improvements in cognitive-emotional regulation scores, including acceptance, rumination, positive refocusing, refocusing on planning, positive reappraisal, and catastrophizing ($P<0.05$). These positive effects were observed during the follow-up stage as well. However, ISTDP did not significantly impact the self-blame component ($P<0.05$). Also, there was no statistically significant difference between ISTDP and MBCT in catastrophizing, positive refocusing, and positive reappraisal. However, MBCT demonstrated superior effectiveness in acceptance, rumination and refocusing on planning compared to ISTDP. In conclusion, both intensive short-term dynamic therapy (ISTDP) and cognitive mindfulness therapy (MBCT) can serve as sustainable interventions in healthcare centers to mitigate cognitive-emotional dysregulation in patients with chronic pain.
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Keywords: Intensive short-term dynamic psychotherapy (ISTDP), Mindfulness-based cognitive therapy (MBCT), Cognitive emotional regulation, Chronic pain

Introduction

In recent times, there has been a notable increase in the prevalence of chronic diseases, which have become the primary source of concern for clients. Among these chronic diseases, one prominent condition is chronic pain. Traditionally, pain has been categorized into two types: acute and chronic. Acute pain serves as a warning sign for possible tissue damage. It draws an individual's attention to the underlying cause of the pain and motivates them to take preventive measures against further harm. Acute pain is characterized by its sudden and rapid onset, as well as its short duration. On the other hand, chronic pain is complex in nature, persists over a long period of time, and possesses an ambiguous and multifaceted etiology. Moreover, it tends to be resistant to treatment (Lumli et al., 2018).

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Chronic pain exerts detrimental effects on psychological, physical, and social functioning. The World Association for the Study of Pain defines pain as an unpleasant sensory and emotional experience that is associated with actual or potential tissue damage, and is expressed based on the presence of such damage. Alongside acknowledging the subjective nature of pain as an inherent characteristic, this definition highlights the significance of emotional factors on par with sensory factors (Narimani, Qasim Khanlou, and Sabri, 2019). Over the course of many years, this definition has undergone changes and transformations. In the most recent revision of the pain definition, Stretke et al. (2016) have redefined it by emphasizing the experiential aspect of pain. The updated definition emphasizes that pain is a distressing experience linked to real or potential tissue damage, and incorporates sensory, emotional, cognitive, and social components. Consequently, this new definition explicitly underscores the role and involvement of psychological and stress-related factors in the experience of pain.

As indicated in the aforementioned definition, pain and its repercussions are recognized as a multifaceted perceptual experience that is influenced by a wide range of psychosocial factors. In contrast to a solely biological model, a comprehensive model integrating psychosocial and biological aspects is employed to elucidate pain. With the passage of time, psychosocial factors such as perceived support and catastrophizing have been found to play a crucial role in the trajectory of this disorder. Based on this understanding, modern approaches to pain treatment, particularly chronic pain, have developed biological psychosocial models that elucidate the onset and persistence of pain. These models not only attribute pain to biological factors, but also consider the contribution of psychological and social factors to this disorder (Turk and Ronald, 2019).

Numerous psychosocial factors have the potential to influence the intensity of pain. However, it is noteworthy that emotional cognitive regulation holds a special position in this regard, as a substantial body of research has demonstrated the direct impact of emotional cognitive regulation and its components on the intensity, frequency, and duration of pain perception (Hamilton, Zatra, & Reich, 2017; Connelly et al., 2019).

When confronted with stressful circumstances, individuals employ various strategies for regulating their emotions in order to rectify or adjust their emotional experiences (Aldau, Nolen-Hoeksma and Switzer, 2010). One of the most prevalent approaches is the utilization of cognitive strategies for emotion regulation. Cognitions or cognitive processes aid individuals in managing and controlling their emotions and prevent them from being overwhelmed by the intensity of their emotional states. Cognitive regulation of emotion pertains to the cognitive manner in which individuals handle and manipulate the influx of information that triggers emotions (Oxner and Gross, 2005, as cited in Hosni and Ohmkaran, 2012). The strategies employed by individuals to regulate their emotions have been extensively

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examined in both theoretical and applied research, and have been discussed under the concept of adaptive and maladaptive strategies (Kring and Salon 2010).

In this context, Garnevsky et al. (2001) have identified nine distinct cognitive emotion regulation strategies encompassing self-blame, acceptance, rumination, positive refocusing, refocusing on planning, positive reappraisal, perspective-taking, catastrophizing, and blaming others. Among these strategies, blaming others, self-blame, mental rumination, and catastrophic thinking constitute maladaptive strategies for cognitive regulation of emotion, while acceptance, refocusing on planning, positive refocusing, positive evaluation, and adopting a perspective constitute adaptive strategies for emotion regulation.

Research findings indicate that individuals who employ weak cognitive styles such as rumination, catastrophizing, and self-blame are more susceptible to emotional difficulties compared to others. Conversely, individuals who utilize favorable styles such as positive reappraisal exhibit less vulnerability (Garnefsky and Karij, 2006).

Psychological interventions aimed at identifying and alleviating suffering and weaknesses, as well as fostering the realization of human capacities and abilities, have garnered the attention of psychologists, psychiatrists, social workers, general practitioners, and even lawyers. These interventions are grounded in the act of attentive listening and providing individuals with the opportunity to express and disclose their thoughts and feelings (Qurbani, 2014). Extensive studies conducted over the past two decades have demonstrated that both verbal and written disclosure enhance immune system functioning, autonomic nervous system functioning, and overall physical and mental health (Penbaker et al., 1997). Intensive and short-term psychodynamic therapeutic approaches are predicated on the nature of the therapeutic relationship and the act of disclosure. The active role of the therapist, coupled with the appropriate implementation of techniques, enables clients to delve into the depths of their emotions and thoughts in the shortest possible time, thereby facilitating greater mental well-being (Duvanlow, 1995; Frederickson et al., 2018).

The primary focus of short-term psychodynamic psychotherapy is to provide immediate assistance to patients in exploring their unconscious emotions, which may be the root cause of various problems (Allen et al., 2008). Key elements of intensive short-term psychodynamic psychotherapy include facilitating deep emotional experiences during therapy sessions, encouraging patient cooperation, actively attending to time constraints, and maintaining a specific focus on identifying emotions in different situations (Driesen et al., 2009).

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In light of the challenges encountered in classical psychoanalysis and drawing from Freud's parapsychology, Duvanlo developed a series of interventions aimed at eliciting emotions and challenging defensive mechanisms. These interventions were designed to maximize emotional conflict and weaken the individual's resistance and defenses, which hindered the process of emotional experience, expression, and intimate relationships (Abbas, Michel, & Gerdizek, 2008).

According to Duvanlo (2014), a preliminary assessment of the patient's ability to withstand the pressure stemming from their unconscious content is crucial. This assessment involves employing certain core techniques of short-term dynamic psychotherapy during the initial interview, while closely monitoring the patient's reactions and responses. The experimental treatment process encompasses specific interventions and corresponding responses. However, the exact techniques of "pressure" and "challenge" employed by dynamic therapists remain unknown.

Numerous studies have demonstrated the effectiveness of short-term dynamic psychotherapy in addressing anxiety among patients with rheumatoid arthritis (Amani et al., 2019), generalized anxiety and its impact on anxiety, depression, and happiness levels in women (Taqvi et al., 2019), reducing symptoms and defensive styles in individuals with depression (Heidari Nesab, Khorianian, & Tabibi, 2013), anxiety in individuals with functional physical disorders (Mark et al., 2021), depression in depressed patients (Lorenzo-Leoss et al., 2017; Ajil Chi et al., 2016), and depression and anxiety in general (Siradazki et al., 2015; Driesen et al., 2015; Johansson et al., 2014).

Mindfulness-based cognitive therapy (MBCT) is another effective treatment option for anxiety and depression (Schalcross, Doberstein, Spieber et al., 2021; Lowry, Heiter, & Caroline, 2021; Xingmin, Ping, Xingjing et al., 2019; Speek, Van Ham, Nick Lake, 2013; Talebizadeh, Shahmir, & Jafar Fard, 2011), as well as stress reduction (Corner & White, 2014). MBCT refers to a range of treatment methods that incorporate behavior shaping techniques and procedures for modifying maladaptive beliefs (Carroll & Onken, 2009).

Maher and Cordova (2019) have reported in their studies that mindfulness-based training improves family functioning, enhances marital satisfaction and happiness, increases job satisfaction, and prevents psychological and social harms such as depression, anxiety, and substance abuse. These positive outcomes are attributed to the enhancement of coping strategies and adaptive emotional regulation techniques.

In the realm of cognitive therapy that is rooted in mindfulness, practitioners adhere to three fundamental objectives: firstly, the regulation of attention; secondly, the cultivation of metacognitive awareness; and lastly, the promotion of decentralization and acceptance towards mental states and contents (Deudouna, 2009). Mindfulness, as a foundational aspect of this therapeutic approach, entails a sequence of

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conscious and self-aware tasks. Each exercise has the deliberate intention of augmenting the capacity and proficiency of the information processing system. The incorporation of cognitive therapy based on mindfulness holds great potential in elucidating the principles of cognitive-behavioral therapy. Mindfulness necessitates the implementation of distinct behavioral, cognitive, and metacognitive strategies to direct the attention process (Segal 2002).

The findings of several studies have indicated that the practice of mindfulness exercises has the ability to alter one's perception of pain (Germer, Siegel and Fulton, 2015), and offer the potential for pain to not result in suffering (Kozak, 2018). Research has demonstrated that mindfulness exercises, including exercises focused on body awareness, are effective in reducing pain among patients suffering from chronic low back pain (Pardos-Gascon et al., 2021 and Zygirska et al., 2021). Furthermore, it has been established that mindfulness training has a positive impact on reducing both pain and anxiety levels (Zidan et al., 2020). Other studies have also revealed the influence of mindfulness and cognitive mindfulness on anxiety and depression (Georji, Aghaei and Golperor, 1400; Shallcross et al., 2021; Arenda, García-Campo, Giuddi et al., 2021; Tobin and Dunkley, 2021; Xingmin et al., 2019; Elhaii, Levini, O'Brien, and Ormire, 2018; Forkman et al., 2016; Van Son et al., 2014), as well as on the pursuit of emotional stability (Soltanizadeh, Kazemi, Darabi, and Gudaripour, 1400; Cheragh Pour Khonkdar, 1399; Ghanbari et al., 1398; Nooruzi and Hashemi, 1396; Naghizadeh and Hosni, 1396; Farhadmanesh et al., 1396; Nist, Bjurnagard, Whittington, and Palamestrina, 2021).

Despite the advancements made in the field of neurology and the introduction of new treatments and complex therapeutic interventions, it appears that a definitive cure for various chronic and treatment-resistant pain conditions remains elusive. Currently, the primary approaches for managing chronic pain primarily revolve around pharmacological interventions. However, these treatments tend to overlook the concerns and mental preoccupations of patients, failing to address the psychological issues and overall quality of life of those affected. Given that novel approaches to understanding and treating non-communicable diseases emphasize the interplay between psychosocial and physical factors, it is imperative to integrate psychological aspects into conventional medical interventions in order to enhance the quality of life and facilitate better adaptation to chronic pain. In light of this, the present study was undertaken with the objective of comparing the efficacy of short-term intensive dynamic psychotherapy and cognitive mindfulness therapy in alleviating anxiety sensitivity, ataxia, and emotional cognitive regulation in patients suffering from chronic pain.

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Material and Methods

The current investigation was conducted as a clinical trial study. The statistical population encompassed all female patients, aged between 30 and 40, who were afflicted with chronic back and spine pain. These patients were referred to the specialized and physiotherapy clinic of Imam Reza (AS) hospital in Islamshahr during the first quarter of 2011 (N=500). In order to determine the appropriate sample size, the Stevens table (Bahrami et al., 2018) was consulted to analyze and compare the three groups. The test power was set at 80%, with an average effect size and a probability of error of 0.05. Additionally, the possibility of dropout for each group was considered to be 15 individuals. In line with this, both the experimental and control groups were comprised of an equal number of patients suffering from chronic pain. The selection process involved targeted sampling from the client pool of the specialist and physiotherapy clinic of Imam Reza Hospital (AS) in Islamshahr, after meeting the specified research criteria. The inclusion criteria for this study entailed being a female patient with chronic pain, while also lacking any mental or personality disorders. Furthermore, the age range of the participants was set between 30 and 40 years, and their consent forms were duly completed. On the other hand, the exclusion criteria consisted of participants expressing dissatisfaction with their involvement in the research process, experiencing acute physical or mental illnesses during the study, missing more than one session of all research sessions, and being unable to complete homework outside of the sessions. The first intervention group was subjected to short-term intensive dynamic psychotherapy, which comprised of 8 sessions lasting 90 minutes each. The second intervention group received cognitive mindfulness therapy, also consisting of 8 sessions of 90 minutes each. Meanwhile, the control group remained on the waiting list. The short-term psychodynamic sessions were conducted according to Davanlo's method (2016), whereas the cognitive therapy sessions based on mindfulness were carried out in accordance with Segal et al.'s (2002) approach.

Table 1 .Summary of the short-term psychodynamic sessions (Davanlo, 2017).

Session	Content
First session: questions about problems	The screening sequence begins with asking about the patient's problem. At this stage, Dovanlo uses the descriptive-phenomenological method.
The second session: pressure	After asking the patient for further clarification, the therapist's pressure to specify, objectify, and clarify the patient's responses gradually initiates the second phase of the dynamic sequence.
The third session: Challenge	When the question of the patient's problem and the pressure for specific answers and the experience of feelings are made, the patient's defense systems are activated and the therapist at this stage enters the stage of verification and analysis of the defenses through the challenge with them.
The fourth session: Challenge with transfer resistance	At the same time as the tension within the patient's psyche increases, the conflicting forms of transferred feelings between the patient and the therapist inevitably appear.

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The fifth session: direct engagement with transfer resistance	Increasing the challenge with the resistance that is directed at transference feelings at this stage causes more crystallization of transference resistance.
The sixth session: direct access to the unconscious (direct experience of transitional emotions and the first breakthrough)	When the patient is able to express the feeling to the therapist, the therapist asks him to describe his inner experience of that feeling.
Seventh session: Transfer analysis	Analysis of transference in this stage is: communication and analysis of similarities between the patient's communication pattern in transference with his other relationships in his current and past life.
Session 8: dynamic research in the unconscious	Using the triangle of conflict and person, the therapist analyzes the materials that are revealed.

Table 2. Summary of cognitive mindfulness therapy model session (Segal et al., 2002)

Session	Subject	Content
1	Self-directed work	Stating the rules and goals of group meetings
		Conscious raisin eating (a meditation in which participants spend a few minutes examining the sensory-visual, olfactory, taste, and touch characteristics of a raisin). Homework: Physical examination within 6 days.
		Physical examination, homework: Mindful performance of a normal daily activity every day (washing, eating, brushing teeth, etc.).
2	Dealing with obstacles	Practice thoughts and feelings, homework: recording pleasant events
3	concentration or breathing technique	sitting meditation; Homework: 3 minute breathing space three times a day
		walking of the conscious mind; Homework: Mindful walking.
		3 minute breathing space; Homework: Record unpleasant events
4	Staying in the present	seeing meditation/hearing meditation; Homework: sitting meditation
		sitting meditation; Homework: 3 minute breathing space not only three times a day but whenever they notice stress and unpleasant emotions.
5	Permission	sitting meditation; Homework: Guided Sitting Meditation
6	Thoughts are not facts	seated visualization meditation; Homework: Shorter guided meditation for at least 40 minutes.
		Ambiguous scenarios; Homework: 3 minute breathing space not only three times a day but whenever they notice stress and unpleasant emotions.
7	Self-care	referring to the connection between creativity and activity; Homework: 3 minute breathing space not only three times a day but whenever they notice stress and unpleasant emotions.
		Discuss the symptoms of the disease; homework
8	Use of what has been learned	Physical examination, homework, reflection, feedback

In this study, the Cognitive Emotion Regulation Questionnaire (CERQ) was administered during three distinct time periods: pre-test, post-test, and follow-up. The development of this questionnaire can be attributed to Garnevsky et al. (2002). This multidimensional questionnaire serves as a means to identify individuals' cognitive coping strategies following the experience of negative events or situations. Unlike other questionnaires that fail to distinguish between individuals and their actual behaviors, the CERQ

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assesses the thoughts of individuals subsequent to negative experiences or traumatic events. It is worth noting that this self-report instrument consists of 36 items and is considered relatively straightforward to administer. Moreover, it is applicable to individuals aged 12 and above, encompassing both those within the general population and clinical groups. The cognitive emotion regulation questionnaire evaluates various cognitive strategies, namely self-blame, acceptance of circumstances, rumination, positive refocusing, refocusing on planning, positive reappraisal, perspective-taking, catastrophizing, and blaming others. The scale scores of this questionnaire range from 1 (never) to 5 (always), with each subscale containing 4 items. The total score for each scale is obtained by summing the scores of the respective items. In their research, Garnevsky et al. (2002) reported the reliability of this questionnaire as indicated by Cronbach's alpha coefficients of 0.91 for positive strategies, 0.87 for negative strategies, and 0.93 for the overall questionnaire. In Iran, the Persian version of this questionnaire on cognitive regulation of emotion was compiled by Hosni (2009). The validity of the subscales in the Persian version was assessed through methods such as internal consistency (ranging from 0.76 to 0.92), retest (ranging from 0.51 to 0.77), and criterion validity based on the correlation with the scores of Beck's second depression list (1996) (ranging from 0.25 to 0.48). Furthermore, the structure of the Persian version was deemed favorable based on principal component analysis using Varimax rotation, which explained 74% of the variance (Hosni, 2009). In Besharat's study (2010), the psychometric properties of this questionnaire, including internal consistency, reliability, retest, content validity, convergent validity, and diagnostic (differential) validity, were reported to be favorable. Additionally, Basharat (2008) conducted a preliminary investigation of the psychometric properties of this questionnaire in a sample of the general population (n=368, 197 women and 171 men), reporting Cronbach's alpha coefficients for the subscales ranging from 0.67 to 0.89.

The data for this research was divided into two sections: descriptive (demographic data) and inferential (mean and standard deviation). Analysis of variance was employed to assess the homogeneity of the groups. SPSS26 software was utilized for data analysis, employing the statistical method of mixed variance analysis between and within subjects. Prior to each analysis, the assumptions of mixed variance analysis between and within subjects, including the Shapiro-Wilk test and Levin's test, were thoroughly examined and reported.

Results

In the study of the demographic information of the subjects, the results showed that the mean and standard deviation of age for the intensive dynamic psychotherapy group were 36.07 and 2.57, for the cognitive mindfulness group 34.13 and 2.74, and for the control group 35.07 and 3.03. have been. and

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the results of variance analysis showed that there is no significant difference between the groups in terms of age variable (P<0.05). In the study of education, the results indicated that in the intensive dynamic psychotherapy group, 4 people had a bachelor's degree, 5 people had a diploma, 5 people had a bachelor's degree, and 1 person had a master's degree. The cognitive mindfulness group had 2 undergraduates, 5 diplomas, 7 bachelors, and 1 master's degree, and finally, the control group had 2 undergraduates, 6 diplomas, 5 bachelors, and 2 postgraduates. The results of the chi square show that there is no significant difference between the groups in terms of education level (P < 0.05). In Table 3, the average and standard deviation of the research variables are presented by stages and groups.

Table 3. Descriptive indices of cognitive-emotional regulation by group and test stage

Variable	Group	Pretest		Posttest		Follow up	
		Mean	SD	Mean	SD	Mean	SD
Blame yourself	ISTDP	14.66	3.84	14.13	2.58	14.60	2.52
	Mindfulness	13.80	2.39	8.46	1.99	9.20	1.52
	Control	15.66	2.74	15.60	2.26	15.80	2.45
Rumination	ISTDP	15.93	2.12	11.93	3.25	11.53	2.58
	Mindfulness	15.40	2.55	9.13	1.18	8.46	1.12
	Control	14.46	1.45	15	1.73	15	1.60
Disastrous perception	ISTDP	12.73	3.57	9.60	2.50	10	2.59
	Mindfulness	13.86	1.88	9.26	1.48	9	1.19
	Control	13.06	3.26	13.06	2.86	13.33	3.15
Blame others	ISTDP	12.60	3.04	12.80	3.18	13.46	2.69
	Mindfulness	13.80	3.18	13.93	2.71	14.13	2.89
	Control	11.93	2.34	11.80	1.82	12.33	2.09
Perspective taking	ISTDP	12	2.36	11.66	2.41	12.26	2.68
	Mindfulness	13.53	2.19	12.80	2.11	13.86	2.35
	Control	12.60	2.44	12.46	2.32	12.80	2.11
Positive refocusing	ISTDP	8.33	1.95	13.42	1.91	12	1.30
	Mindfulness	8.73	2.25	14.66	2.19	14.86	1.95
	Control	9.53	1.84	9.13	1.68	9.26	2.05
Acceptance of terms	ISTDP	8.13	1.92	11.60	1.88	12.06	2.18
	Mindfulness	9.26	1.90	14.46	2.06	15.40	2.09
	Control	8.80	2.33	8.60	1.76	8.76	2.07
Refocus on planning	ISTDP	6.93	1.57	11.53	1.35	11.86	1.50
	Mindfulness	7.20	1.65	14.40	2.13	14.86	2.38
	Control	8	1.77	7.93	1.66	7.60	1.99
Positive reassessment	ISTDP	9.20	2.24	14.06	1.62	13.60	1.80
	Mindfulness	8.46	2.19	13.93	1.94	14.26	1.79
	Control	10.13	1.64	9.53	1.45	9.60	1.45

As can be seen in Table 3, there were changes in the scores of the subjects of the experimental groups in cognitive-emotional regulation in the post-test and follow-up stages. In order to know whether these changes obtained in the post-test and follow-up are statistically significant or not, mixed variance analysis between and within the subjects was used. The use of this test requires compliance with some basic assumptions, these assumptions include the normality of the distribution of scores and the

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homogeneity of variances, which were examined first. The Shapiro-Wilks test was used to check the normality. Since the values of the Shapiro-Wilks test were not significant in any of the steps (p>0.05), it can be concluded that the distribution of scores is normal. Levine's test was also used to check the homogeneity of variances. According to the results, the index of Levin's test was not statistically significant (p>0.05) in the three stages of evaluation, and thus the assumption of equality of variances was confirmed. The research data questioned the assumption of homogeneity of variance-covariance matrices (M-Box); Therefore, this assumption has also been met (p>0.05). In addition, SPSS Explorer was used to check outlier data, and the findings indicated the absence of outlier data. Considering that the presuppositions of using mixed variance analysis between and within subjects have been met, this statistical test can be used.

The results of the statistical test for the sphericity test, which is one of the presuppositions of variance analysis with repeated measurements, indicate that the significance level is less than 0.05 and the presupposition of sphericity is not established except in the variable of rumination and perspective taking in the rest of the variables. be Because the results of Mauchly's Test in self-blame, acceptance of conditions, positive refocusing, refocusing on planning, positive re-evaluation, catastrophic perception and blaming others are meaningful to determine the effect of subjects within the components of self-blame, acceptance of conditions, refocusing. Positive, refocusing on planning, positive reappraisal, catastrophizing and blaming others are reported in the Greenhouse test, and the results of Mauchly's Test of rumination and perspective-taking components are not significant to determine the effect of within-subjects on rumination and perspective-taking components. The sphericity test is reported, the results of which are shown in Table 4.

Table 4. The results of the effects within the groups for the variables of the components of cognitive-emotional regulation

Variable	Effect	SS	DF	MS	F	P	Effect size
Blame yourself	Accepted sphericity	157.36	4	39.34	68.21	.001	0.76
	Greenhouse-Geisser	157.36	3.60	43.68	68.21	0.001	0.76
Rumination	Accepted sphericity	265.18	4	66.29	98.35	0.001	0.82
	Greenhouse-Geisser	265.18	3.61	73.40	98.35	0.001	0.82
Disastrous perception	Accepted sphericity	122.96	4	30.74	40.26	0.001	0.65
	Greenhouse-Geisser	122.96	3.18	38.63	40.26	0.001	0.65
Blame others	Accepted sphericity	1.73	4	0.43	0.65	0.62	0.03
	Greenhouse-Geisser	1.73	3.41	0.51	0.65	0.60	0.03
Perspective taking	Accepted sphericity	2.35	4	0.58	0.92	0.45	0.04
	Greenhouse-Geisser	2.35	3.85	0.61	0.92	0.45	0.04
Positive refocusing	Accepted sphericity	230.29	4	57.57	57.57	0.001	0.73
	Greenhouse-Geisser	230.29	3.21	71.61	57.75	0.001	0.73
Acceptance of terms	Accepted sphericity	173.94	4	43.48	111.51	0.001	0.84
	Greenhouse-Geisser	173.94	3.24	53.66	111.51	0.001	0.84
Refocus on planning	Accepted sphericity	305.71	4	76.43	56.78	0.001	0.73
	Greenhouse-Geisser	305.71	3.20	95.46	56.78	0.001	0.73
Positive reassessment	Accepted sphericity	224.08	4	56.02	55.40	0.001	0.72
	Greenhouse-Geisser	224.08	3.12	71.57	55.40	0.001	0.72

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As the results in Table 4 show, in the multivariate analysis of variance, the effect of time in the Greenhouse-Geisser and Sphericity test (P < 0.001) in the components of self-blame, acceptance of conditions, rumination, positive refocusing, refocusing on planning, Positive reappraisal, catastrophic perception is significant, which means there is a significant difference between the scores of the components of emotional cognitive regulation (self-blame, acceptance of the situation, rumination, positive refocusing, refocusing on planning, positive reappraisal, catastrophic perception) of the subject. are in pre-test, post-test and follow-up stages. Table 4 also shows that in the multivariate analysis of variance, the effect of time in the Greenhouse-Geisser and Sphericity test (P<0.05) is not significant in the components of taking a point of view and blaming others, which means there is no significant difference between the scores of the components of taking a point of view and Subjects blame others in pre-test, post-test and follow-up stages.

Table 5. The results of effects between groups for components of cognitive-emotional regulation

Variable	Source	SS	DF	MS	F	P	Effect size
Blame yourself	Group	665.34	2	332.67	20.60	0.001	0.49
	Error	678.08	42	16.14	-	-	-
Rumination	Group	330.193	2	165.09	17	0.001	0.44
	Error	407.77	42	9.70	-	-	-
Disastrous perception	Group	174.50	2	87.25	4.57	0.016	0.18
	Error	800.26	42	19.05	-	-	-
Blame others	Group	84.13	2	42.06	2.04	0.14	0.08
	Error	866.13	42	20.62	-	-	-
Perspective taking	Group	45.64	2	22.82	1.51	0.23	0.06
	Error	636.35	42	15.15	-	-	-
Positive refocusing	Group	268.28	2	134.14	14.67	0.001	0.41
	Error	383.60	42	9.13	-	-	-
Acceptance of terms	Group	420.68	2	210.34	18.09	0.001	0.46
	Error	488.17	42	11.62	-	-	-
Refocus on planning	Group	418.54	2	209.27	29.33	0.001	0.58
	Error	299.60	42	7.13	-	-	-
Positive reassessment	Group	187.60	2	93.80	11.91	0.001	0.36
	Error	330.66	42	7.87	-	-	-

As the results in Table 5 show, there is a significant difference between the test and control groups in the components of self-blame, acceptance of circumstances, rumination, positive refocusing, refocusing on planning, positive reappraisal, and catastrophic perception (0.05). >P) in other words, "between the effectiveness of short-term intensive dynamic psychotherapy (ISTDP) and cognitive mindfulness therapy (MBCT) on the components of self-blame, acceptance of circumstances, rumination, positive refocusing, refocusing on planning, positive reappraisal, there is a difference in catastrophic perception in patients with chronic pain. Also, the results showed that there is a difference between the effectiveness of short-term intensive dynamic psychotherapy (ISTDP) and cognitive mindfulness therapy (MBCT) on

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the components of perspective-taking and blaming others in patients with pain. chronic, there is no significant difference (P<0.05).

In the continuation of pairwise comparisons of the average adjustment of the test stages (pre-test, post-test and follow-up) in the components of anxiety sensitivity is shown in Table 6. In order to determine in which, phase the components of emotional cognitive regulation have a significant difference, Bonferroni post hoc test was used, which compares the means two by two.

Table 6. The results of Bonferroni test of cognitive-emotional components in the pre-test, post-test and follow-up stages

variable	Comparison	ISTDP		MBCT		Control	
		Mean difference	P	Mean difference	P	Mean difference	P
Blame yourself	Pre-test - post-test	0.53	0.21	5.33	0.001	0.06	1
	Pre-test - follow-up	0.06	1	4.60	0.001	-0.13	1
	Post-test - follow-up	-0.46	0.08	-0.73	0.03	-0.20	1
Rumination	Pre-test - post-test	4	0.001	6.26	0.001	-0.53	0.08
	Pre-test - follow-up	4.40	0.001	6.93	0.001	-0.43	0.053
	Post-test - follow-up	0.40	0.33	0.66	0.058	0	1
Disastrous perception	Pre-test - post-test	3.13	0.001	4.60	0.001	0	1
	Pre-test - follow-up	2.73	0.001	4.86	0.001	-0.26	0.31
	Post-test - follow-up	-0.40	0.81	0.26	1	-0.26	0.90
Positive refocusing	Pre-test - post-test	-5.06	0.001	-5.93	0.001	0.40	0.63
	Pre-test - follow-up	-3.66	0.001	-6.13	0.001	0.26	1
	Post-test - follow-up	1.40	0.016	-0.20	1	-0.13	1
Acceptance of terms	Pre-test - post-test	-3.46	0.001	-5.20	0.001	020	1
	Pre-test - follow-up	-3.93	0.001	-6.13	0.001	0	1
	Post-test - follow-up	-0.46	0.04	-0.93	0.001	-0.20	1
Refocus on planning	Pre-test - post-test	-4.60	0.001	-7.20	0.001	0.06	1
	Pre-test - follow-up	-4.94	0.001	-7.20	0.001	0.40	0.69
	Post-test - follow-up	-0.33	0.62	-0.46	0.61	0.33	1
Positive reassessment	Pre-test - post-test	-4.86	0.001	-5.46	0.001	0.60	0.24
	Pre-test - follow-up	-4.40	0.001	-5.80	0.001	0.53	0.12
	Post-test - follow-up	0.46	0.39	-0.33	0.52	-.06	1

Table 6 shows that short-term intensive dynamic psychotherapy (ISTDP) and cognitive mindfulness therapy (MBCT) had a significant effect on the components of emotional cognitive regulation in both post-test and follow-up stages. Table 6 also shows that short-term intensive dynamic psychotherapy (ISTDP) did not have a significant effect on the self-blame component in both the post-test and follow-up stages.

As the results of Table 6 show, the difference between the pre-test and post-test averages and the pre-test average difference with follow-up is greater and more significant than the post-test and follow-up average difference, which indicates that short-term intensive dynamic psychotherapy (ISTDP) and Cognitive Mindfulness Therapy (MBCT) has had an effect on the components of cognitive-emotional regulation in the post-test stage and the continuation of this effect in the follow-up stage. Since the obtained results did not determine which treatment method was more effective. Therefore, in order to

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investigate the difference in the effectiveness of short-term intensive dynamic psychotherapy (ISTDP) and cognitive mindfulness therapy (MBCT) on the components of emotional cognitive regulation, Bonferroni test was used. The results are shown in Table 7.

Table 7. Pairwise comparison with Bonferroni test in order to determine the effect of the more effective method on the components of cognitive-emotional regulation

variable	Comparison	Mean difference	P
Blame yourself	Short-term intensive dynamic psychotherapy with cognitive mindfulness therapy	3.97	0.001
	Short-term intensive dynamic psychotherapy with control group	-1.22	0.46
	Cognitive mindfulness therapy with control group	-5.20	0.001
Rumination	Short-term intensive dynamic psychotherapy with cognitive mindfulness therapy	2.13	0.007
	Short-term intensive dynamic psychotherapy with control group	-1.68	0.04
	Cognitive mindfulness therapy with control group	-3.82	0.001
Disastrous perception	Short-term intensive dynamic psychotherapy with cognitive mindfulness therapy	0.06	1
	Short-term intensive dynamic psychotherapy with control group	-2.37	0.04
	Cognitive mindfulness therapy with control group	2.44	0.03
Positive refocusing	Short-term intensive dynamic psychotherapy with cognitive mindfulness therapy	-1.51	0.06
	Short-term intensive dynamic psychotherapy with control group	1.93	0.01
	Cognitive mindfulness therapy with control group	3.44	0.001
Acceptance of terms	Short-term intensive dynamic psychotherapy with cognitive mindfulness therapy	-2.44	0.004
	Short-term intensive dynamic psychotherapy with control group	1.86	0.03
	Cognitive mindfulness therapy with control group	4.31	0.001
Refocus on planning	Short-term intensive dynamic psychotherapy with cognitive mindfulness therapy	-2.04	0.002
	Short-term intensive dynamic psychotherapy with control group	2.26	0.001
	Cognitive mindfulness therapy with control group	4.31	0.001
Positive reassessment	Short-term intensive dynamic psychotherapy with cognitive mindfulness therapy	0.06	1
	Short-term intensive dynamic psychotherapy with control group	2.53	0.001
	Cognitive mindfulness therapy with control group	2.46	0.001

Based on Table 7, we can conclude that short-term intensive dynamic psychotherapy (ISTDP) and cognitive mindfulness therapy (MBCT) compared to the control group improved the scores of components of emotional cognitive regulation (acceptance of conditions, rumination, positive refocusing, refocusing on planning, positive reappraisal and catastrophic perception) in patients with chronic pain ($P<0.05$). Also, the results showed that short-term intensive dynamic psychotherapy (ISTDP) had no significant effect on the self-blame component ($P<0.05$). There is no statistically significant difference between the effectiveness of short-term intensive dynamic psychotherapy (ISTDP) and cognitive mindfulness therapy (MBCT) in the components of catastrophizing and positive

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refocusing and positive reappraisal in patients with chronic pain (05/ 0 < P). There is a statistically significant difference between the effectiveness of short-term intensive dynamic psychotherapy (ISTDP) and cognitive mindfulness therapy (MBCT) in the components of acceptance of conditions, rumination, refocusing on planning and catastrophizing in patients with chronic pain. P<0.05). Cognitive Mindfulness Therapy (MBCT) has been more effective in the components of accepting conditions, rumination, refocusing on planning and catastrophizing in patients with chronic pain compared to short-term intensive dynamic psychotherapy.

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Discussion

This research was conducted with the aim of comparing the effectiveness of short-term intensive dynamic psychotherapy and cognitive mindfulness therapy on emotional cognitive regulation in patients with chronic pain. The results showed that short-term intensive dynamic psychotherapy and cognitive mindfulness therapy improved the scores of components of emotional cognitive regulation (acceptance of conditions, rumination, positive refocusing, refocusing on planning, positive reappraisal and catastrophic perception) compared to the control group.) in patients suffering from chronic pain and this effect continued in the follow-up phase. Also, the results showed that short-term intensive dynamic psychotherapy did not have a significant effect on the self-blame component. There is no statistically significant difference between the effectiveness of short-term intensive dynamic psychotherapy and cognitive mindfulness therapy (MBCT) in the components of catastrophic perception and positive refocusing and positive reevaluation in patients with chronic pain. There is a statistically significant difference between the effectiveness of short-term intensive dynamic psychotherapy (ISTDP) and cognitive mindfulness therapy (MBCT) in the components of acceptance of conditions, rumination, refocusing on planning and catastrophizing in patients with chronic pain. Cognitive Mindfulness Therapy (MBCT) has been more effective in the components of accepting conditions, rumination, refocusing on planning and catastrophizing in patients with chronic pain compared to short-term intensive dynamic psychotherapy.

No research was found regarding the effectiveness of short-term intensive dynamic psychotherapy on cognitive-emotional regulation in patients with chronic pain. But researches in support of the findings of this research (Amani et al., 2019; Taqvi et al., 2018; Heydari Nesab et al., 2013; Mark et al., 2021; Lorenzo-Liusz et al., 2017; Lorenzo-Liusz et al., 2017; Ajil Chi et al., 2016; Siradazki et al., 2015; Driesen et al., 2015; Johansson et al., 2014) in the effectiveness of short-term intensive dynamic psychotherapy on anxiety and depression.

In explaining these results, it can be said that in psychodynamic psychotherapies, emotional conflict is assumed to be the root of mental disorders. In this method, by using guided visualization techniques and gradual desensitization, it gently and empathetically causes the patient to face conflicts caused by relationships, past and present, and in relation to the therapist, and by recognizing and experiencing activating and inhibiting emotions, conflicts resolve his emotional (McCullough, 2003). In this way, in intensive short-term dynamic psychotherapy, a person's self-understanding, confrontation, challenge and direct conflict, clarification, sense of sufficiency and problem skills, unlocking the acquisition of independence, skills to deal with dangerous situations and psychological pressure and many skills to improve the situation The desired psychology is taught. By participating in these sessions, the sick people got to know their feelings, emotions and thoughts, and the examiner made them aware by changing their thoughts and also guided them towards rational and wise ways of dealing with emotions in order to regulate emotions; In fact, they have been led to believe that they can identify their irrational and unreasonable beliefs and thoughts and regulate their emotions by challenging their thoughts and thinking.

In addition, one of the techniques of interest in short-term dynamic psychotherapy is emotional expression. Emotional expression includes a kind of verbalization of refinement and confession about stressful or conflicting events; It means talking and emptying everything that causes emotional or psychological pain (the most basic idea emphasized in dynamic therapies). Deep emotional experience and its expression can regulate cognitive processes and arousal through the reduction of inhibition and determine the true identity of a person and his capabilities, and improve coping skills and interpersonal relationships, and affect emotional regulation through. The results showed that cognitive mindfulness treatment has an effect on emotional cognitive regulation in patients with chronic pain. No research was found regarding the effectiveness of cognitive mindfulness treatment on emotional cognitive regulation in patients with chronic pain. But some researches are in line with the findings of this research (Gorji et al., 1400; Soltanizadeh et al., 1400; Chiragpour Khonkdar, 1399; Qanbari et al., 1398; Noorvarzi and Hashemi, 1396; Naghizadeh and Hosni, 1396; Farhadmanesh and et al., 2021; Nist et al., 2021; Chalcross et al., 2021; Arenda et al., 2021; Tobin and Dunkley, 2021; Pardos-Gascon et al., 2021; Zygirska et al., 2021; Xingmin et al., 2019; Elhaii et al., 2018; and Hoffman and Gomez, 2017; Forkman et al., 2016 and Van Son et al., 2014) in the effectiveness of cognitive mindfulness treatment on anxiety and depression and cognitive emotional regulation.

In expounding upon this finding, it can be postulated that research evidence suggests that the practice of mindfulness alters an individual's emotional responses by modifying cognitive and emotional processes, thereby resulting in lower scores on measures of cognitive regulation of emotions, fear, and avoidance

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of emotions. Furthermore, engaging in mindfulness exercises aids individuals in relinquishing unhealthy habits and behavioral patterns from their thoughts, hence assuming a significant role in the cognitive regulation of emotions (Hosseini et al., 1400). Mindfulness-based Cognitive Therapy (MBCT) endeavors to address these concerns by shielding individuals against preoccupations, mental ruminations, and negative emotions. Individuals are encouraged to engage in frequent concentration exercises focused on neutral stimuli and internal awareness of the body and mind. Consequently, these exercises diminish negative emotions (Yazdi and Taghizadeh, 1400).

Evidently, mindfulness exercises foster the improvement of cognitive emotion regulation skills by fostering positive mood and enhancing attention, alertness, and acceptance of emotions experienced by individuals. In doing so, it modulates strategies employed for cognitive emotion regulation (Hoelzel et al., 2011). Additionally, these exercises preclude the reinforcement of previous emotional avoidance. Moreover, mindfulness exercises afford a context in which individuals can cultivate new associations with negative emotions that are less inhibitory, while simultaneously dismantling old negative connections (Hosseini et al., 1400). It has been observed that the cognitive therapy intervention based on mindfulness has effectively diminished negative strategies and augmented positive strategies for cognitive emotion regulation across various aspects. Mindfulness, through the utilization of positive strategies for emotional regulation, has devised diverse methodologies to confront negative emotions and distress, thereby facilitating the enhancement of cognitive emotion regulation strategies in individuals.

Furthermore, the findings indicate that MBCT has proven more efficacious than short-term intensive dynamic psychotherapy in fostering acceptance of conditions, reducing rumination, refocusing on planning, and mitigating catastrophic perception among patients with chronic pain. This can be attributed to the fact that the exercises implemented subsequent to mindfulness treatment aid chronic pain patients in dispelling negative thoughts, unhealthy habits, and maladaptive behavioral patterns, thereby significantly contributing to the regulation of emotions. Thus, the observed improvement in cognitive emotion regulation strategies among patients suffering from chronic pain in the present study can be elucidated within the framework of the impact of mind-based therapy on these strategies. Succinctly put, it appears that this treatment has enhanced individuals' cognitive regulation skills by effectively managing negative emotions and fostering positive mood (Aven Vali et al., 2015). This is achieved through an augmentation in attention, alertness, and acceptance of emotions experienced by the individual, thereby exerting control over their cognitive emotion regulation strategies (Hoelzel et al., 2011). In the mindfulness-based treatment approach, individuals are instructed to abstain from judgment, thereby forsaking incompatible cognitive regulation strategies such as self-blame and

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rumination, which entail negative self-judgment. Instead, cognitive regulation of emotion aligns with the sentence of refocusing on planning (Ghanbari et al., 2018).

The limitations of this research included the low external validity and generalizability of the results due to the controlled conditions of the research and considering patients with chronic pain as the statistical population, the limited time of the training course. Therefore, it is suggested to use short-term intensive dynamic psychotherapy (ISTDP) and cognitive mindfulness therapy (MBCT) to improve emotional cognitive regulation.

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