KMAN PUBLISHING INSTITUTE
Journal Website

Article history:
Received 09 January 2024
Revised 05 February 2024
Accepted 11 February 2024
Published online 10 March 2024

Journal of Adolescent and Youth Psychological Studies

Volume 5, Issue 3, pp 44-54

E-ISSN: 2981-2526

Comparison of the Effectiveness of Cognitive Behavioral Therapy and Schema Therapy on Cognitive Emotion Regulation in Patients with Major Depressive Disorder

Mahshid. Barooti[1], Mahboobeh. Chinaveh[2*], Sara. Saedi[3]

[1] Ph.D Student, Department of Psychology, Borujerd Branch, Islamic Azad University, Borujerd, Iran
[2] Assistant Professor, Department of Psychology, Arsanjan Branch, Islamic Azad University, Arsanjan, Iran
[3] Assistant Professor, Department of Psychology, Borujerd Branch, Islamic Azad University, Borujerd, Iran

*** Corresponding author email address**: Hivachinaveh@gmail.com

A r t i c l e I n f o

Article type:
Original Research

How to cite this article:
Barooti, M., Chinaveh, M., & Saedi, S. (2024). Comparison of the Effectiveness of Cognitive Behavioral Therapy and Schema Therapy on Cognitive Emotion Regulation in Patients with Major Depressive Disorder. *Journal of Adolescent and Youth Psychological Studies, 5*(3), 44-54.
https://doi.org/10.61838/kman.jayps.5.3.5

A B S T R A C T

Objective: The aim of this study was to compare the efficacy of cognitive behavioral therapy and schema therapy on cognitive emotion regulation in patients with major depressive disorder.

Methods and Materials: The research employed a quasi-experimental pre-test-post-test design with a control group and a one-month follow-up. The study population included all patients visiting Entekhab-e No and Aryaz clinics in Tehran during the period from February 2021 to May 2021, who were diagnosed with major depressive disorder by a psychiatrist. Forty-five individuals were purposively selected and randomly assigned to two experimental groups and one control group (15 per group). The first and second experimental groups underwent 12 and 8 sessions of cognitive behavioral therapy based on the Rosello protocol (2015) and schema therapy based on Young's protocol (2003), respectively. The research instrument was the Cognitive Emotion Regulation Questionnaire (CERQ) (Garnefski & Kraaij, 2006). Data were analyzed using repeated measures ANOVA, Bonferroni test, and SPSS version 24.

Findings: Results showed that both cognitive behavioral and schema therapy interventions significantly improved scores of adaptive emotion regulation and decreased scores of maladaptive emotion regulation compared to the control group ($P<0.001$), with these effects maintained up to the one-month follow-up period. Additionally, there was a difference in the efficacy of the two intervention methods in increasing adaptive emotion regulation scores and decreasing maladaptive emotion regulation scores ($P<0.001$), with cognitive behavioral therapy being more effective than schema therapy.

Conclusion: Thus, utilizing cognitive behavioral therapy and schema therapy can take an important step in reducing the negative outcomes of emotion regulation deficits in depressed patients.

Keywords: *Major depressive disorder, emotion regulation, cognitive behavioral therapy, schema therapy.*

1. Introduction

Major depressive disorder is a common and potentially disabling psychiatric disorder affecting 12% of adults worldwide, with the highest prevalence among youth, women, and the elderly in the United States (Hasin et al., 2018). Major depressive disorder significantly burdens public health and ranks third in leading causes of disability worldwide (Malhi & Mann, 2018). Depression can have detrimental effects on health and well-being, exposing individuals to risks of social withdrawal, substance abuse, and disruption in work, family, and social life (Kopf-Beck et al., 2020). Individuals with major depressive disorder report significantly lower quality of life compared to non-depressed individuals and those with chronic medical conditions such as cancer, high blood pressure, diabetes, and chronic pain (Fries et al., 2023). Diagnosis of major depressive disorder, according to the Diagnostic and Statistical Manual of Mental Disorders (Fifth Edition), involves at least two weeks of depressed mood or loss of interest and pleasure, along with other symptoms such as changes in sleep, weight, and decreased energy (APA, 2022). Major depressive disorder is an affective disorder characterized by persistent negative affect and difficulties in experiencing positive emotions (Joormann & Stanton, 2016). Studies have shown that problems in emotional self-regulation following negative life events may pose a risk for depression, indicating that depressed patients often use maladaptive strategies for emotion regulation (Bradley et al., 2023; Visted et al., 2018).

Research has demonstrated that emotion regulation, or the ability to change one's emotional experience to produce an appropriate response, is impaired in adolescents and young adults with major depressive disorder (Cornelis et al., 2019; Stephanou et al., 2017). For instance, suppression, an maladaptive emotion regulation style in which an individual prevents the expression of feelings, is associated with greater depression symptoms in youths and adults (Gross & John, 2003). Conversely, reappraisal, an adaptive emotion regulation style where an individual changes their interpretation of a situation to alter its emotional impact, is less used by adults with major depressive disorder (Stephanou et al., 2017). Emotion regulation occurs through a network of brain regions that start with emotional arousal in the amygdala and basal ganglia, then proceed to frontal areas including the ventrolateral prefrontal cortex and insula, as well as other regions like the superior temporal gyrus (Cohen et al., 2014). Neuroimaging studies have shown that executive functions, cognitive control, and regulation of negative automatic thoughts play significant roles in emotion regulation in individuals with major depressive disorder (Bagherinia et al., 2015; Caldiroli et al., 2021; Carter et al., 2013; Delaparte et al., 2020; Fries et al., 2023; Hasin et al., 2018; Stephanou et al., 2017). Overall, considering emotion regulation for depression treatment is important as it affects how individuals cope with negative emotions and feelings and experience positive emotions (Joormann & Stanton, 2016).

For treating major depressive disorder, antidepressant medication is often used, although 50% of patients do not experience improvement with medication alone (Hasin et al., 2018). This indicates the need for developing more effective treatments for major depressive disorder (Fries et al., 2023). Currently, cognitive behavioral therapy (CBT) is the most effective and first-line evidence-based psychological treatment for depression and anxiety in patients (Bennebroek Evertsz et al., 2017). In fact, cognitive behavioral therapy is considered a first-line treatment option due to its apparent superiority over alternative treatments in patients with depressive disorders (Tolin, 2010). Cognitive behavioral therapy can be seen as a psychosocial intervention for treating mental disorders that focuses on developing personal coping strategies by changing cognitive patterns (thoughts, beliefs, and attitudes) and, consequently, altering behavior and effectively regulating emotions (Feldman, 2007). This therapeutic approach is based on the premise that minimizing negative and self-defeating attitudes leads to behavioral and mood reconstruction in depressed individuals. The cognitive-behavioral approach improves symptoms by teaching coping skills, promoting a positive outlook, adapting to current conditions, and reducing psychological distress. Empirical evidence strongly supports the effectiveness of cognitive behavioral therapy for depression; however, up to fifty percent of individuals do not fully respond to treatment. Ongoing research indicates that schema therapy is an effective treatment for entrenched and chronic problems, suggesting it may also be an effective treatment for depression (Abdolmohamadi & Ghadiri, 2023; Cook et al., 2019; Moloud et al., 2022).

One factor that may impact the persistence of depression is the presence of early maladaptive schemas in patients (Young & Brown, 2017; Young et al., 2003). Early maladaptive schemas are broad patterns comprised of memories, emotions, cognitions, and bodily sensations generally formed in childhood or adolescence. These schemas persist and remain throughout life (Young &

JAYPS Adolescent and Youth Psychological Studies E-ISSN: 2981-2526

Brown, 2017; Young et al., 2003). These early maladaptive and inefficient schemas related to self and others, although causing distress, can feel comfortable and become habitual to the patient (Koppers et al., 2020; Malogiannis et al., 2014). Early maladaptive schemas drive people towards a sense of fit. According to Beck, individuals with more negative schemas are more likely to experience chronic depression in the future (Monjezi et al., 2022; Nikoogoftar & Sangani, 2020). Given the ongoing research and the history of schemas and their role in depression, it appears that, in addition to cognitive behavioral therapy, utilizing schema therapy for treating major depressive disorder is appropriate (Darabi et al., 2015). Schema therapy was initially conceptualized for individuals non-responsive to cognitive therapy and patients suffering from personality disorders (Young & Brown, 2017; Young et al., 2003). Bamelis and colleagues found positive initial results of schema therapy as a treatment for personality disorders in reducing depressive symptoms as a secondary outcome in follow-ups (Bamelis et al., 2014). Considering further evidence on schema therapy for treating major depressive disorder (Fassbinder et al., 2016; Renner et al., 2016), it was hypothesized that schema therapy is a promising approach in treating depression and overcoming the weaknesses of cognitive behavioral therapy approaches, especially for more severe and complex manifestations of major depressive disorder, including those with personality disorders, as they present clinical manifestations in inpatient and clinical settings (Kopf-Beck et al., 2020). In the last two decades, the use of schema therapy has increasingly gained popularity, hence its selection as one of the treatments studied in the current research.

In summary, considering that it is stated that half of the depressed individuals do not fully respond to cognitive behavioral therapy, and on the other hand, Young has introduced schema therapy as an effective treatment for chronic disorders such as personality disorders and depression (Young, 2006), the current study compared the effectiveness of these two methods in patients with major depressive disorder. Also, based on searches conducted, despite empirical evidence regarding the role of emotion regulation variable in major depressive disorder, there has been no research that cohesively examined and compared the effectiveness of schema therapy and cognitive behavioral therapy on emotion regulation. Considering the high prevalence of major depressive disorder and its significant economic and social burden on the individual and society, the impacts of this disorder on the decline in individuals' quality of life, and the deficits in emotion regulation in the formation and development of this disorder, the present research aimed to compare cognitive behavioral therapy and schema therapy on emotional regulation in patients with major depressive disorder.

2. Methods and Materials

2.1. Study Design and Participants

The research method was a quasi-experimental design with pre-test, post-test, and control groups, including a one-month follow-up. The study population consisted of all patients visiting Entekhab-e No and Aryaz clinics in Tehran between February 2021 and May 2021, diagnosed with major depressive disorder by a psychiatrist. Sample size estimation was performed using G*Power software, considering an effect size of 0.40, a statistical power of 99%, and an alpha error of 0.05, resulting in a total sample size of 39 individuals. Accounting for a 15% dropout rate, 45 participants were recruited through convenience sampling and assigned to three groups (schema therapy intervention, cognitive behavioral therapy intervention, and control group, each with 15 participants) using simple random allocation without replacement, utilizing a random numbers table and coin toss.

Inclusion criteria included scoring a minimum of 30 on the Beck Depression Inventory, a diagnosis of major depressive disorder based on the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) criteria through a structured clinical interview by a psychiatrist, not suffering from concurrent clinical disorders, no history of mental illness, no alcohol or substance dependence, not receiving any other concurrent treatments, and providing informed consent for participation in the research. Exclusion criteria included having suicidal thoughts or missing more than two therapy sessions.

After allocating participants to the intervention and control groups, informed consent was obtained, and the study's procedures and objectives were explained. All participants provided written informed consent before participation. Baseline assessments were conducted one week before the onset of any treatment, including completing the Cognitive Emotion Regulation Questionnaire (Garnefski & Kraaij, 2006). Following the pre-test, participants in the experimental groups attended therapy sessions, with the schema therapy group attending 10 sessions and the CBT group attending 12 sessions on a bi-weekly basis. Post-test assessments were conducted one

JAYPS Adolescent and Youth Psychological Studies E-ISSN: 2981-2526

week after the conclusion of therapy sessions in the experimental groups (post-test phase) and again one month later (follow-up phase). Control group participants did not receive any treatment but were referred to Entekhab-e No clinic in Tehran for treatment after the study concluded. In this research, therapists and patients were aware of the intervention participation, but the data analyst and evaluator were blinded to group allocations. Collected data were coded and analyzed anonymously. Ethical considerations included participants' health and safety, confidentiality of personal information, respect for privacy, and voluntary participation.

2.2. Measures

2.2.1. Cognitive Emotion Regulation

The Cognitive Emotion Regulation Questionnaire (CERQ): A 16-item tool developed by Garnefski & Kraaij (2006) to assess cognitive emotion regulation strategies in response to threatening and stressful life events on a five-point scale ranging from 1 (never) to 5 (always) across 9 subscales. The subscales include self-blame, blaming others, rumination/focus on thought, catastrophizing, putting into perspective, positive refocusing, positive reappraisal, acceptance, and planning. Scores range from 2 to 10 for each subscale, with higher scores indicating greater use of that cognitive strategy. Cognitive strategies of emotion regulation are categorized into adaptive (e.g., putting into perspective, positive refocusing) and non-adaptive (e.g., self-blame, catastrophizing) strategies. The questionnaire's content validity was confirmed with a Kendall's agreement coefficient of about 82% (Garnefski et al., 2009; Garnefski & Kraaij, 2006). Convergent and divergent validity were assessed with the Beck Depression Inventory, showing significant negative correlations between adaptive strategies and depression scores and significant positive correlations between non-adaptive strategies and depression scores. In Iran, Besharat (2016) confirmed the content validity and test-retest reliability coefficients for the CERQ's components, demonstrating the tool's reliability. In this study, Cronbach's alpha reliability coefficient for adaptive and non-adaptive emotion regulation strategies was 0.89 and 0.78, respectively, indicating appropriate reliability (Rastgoo et al., 2023).

2.3. Interventions

2.3.1. Cognitive Behavioral Therapy (CBT)

Cognitive Behavioral Therapy (CBT) sessions were conducted based on Rosello and colleagues' (2007) standard CBT protocol over 12 weekly 60-minute individual sessions. The validity of the Rosello et al. CBT protocol was reviewed and approved by six experts from the Islamic Azad University, Boroujerd branch (Rosello & Bernal, 2007).

Module One: Understanding the Impact of Thoughts (Sessions 1-4)

The initial phase of CBT emphasizes educating the client on how their thoughts directly influence their mood and mental state. Throughout these sessions, the rationale behind CBT is meticulously analyzed, providing the client with a deep understanding of depressive disorder symptoms and how CBT can be utilized for improvement. The client's current issues are assessed, therapeutic goals are set, and the cognitive model of disorder—illustrating the relationship between thoughts, feelings, and behaviors—is taught. These sessions also address any questions or uncertainties the client might have about the therapy process, establishing clear rules for therapeutic sessions and planning for future ones.

Module Two: The Role of Activities in Mood Regulation (Sessions 5-8)

The second module aims to enlighten the client on how their activities can affect their mood. Discussions and exercises around self-care and engaging in pleasurable activities throughout the day are introduced, aiming to elevate mood and general well-being. A list of thoughts that improve the client's mood, along with mindfulness relaxation exercises for fostering positive mental attitudes, is compiled. This module introduces the vicious cycle of depression (triggering event - negative thought/belief - outcome of the belief - internal dialogue about the thought) and focuses on empowering the client to take control over their life by identifying alternatives for more freedom and choice. Together with the therapist, goals and activities aimed at improving mood are defined.

Module Three: Social Relationships and Their Impact on Mood (Sessions 9-12)

The final module centers on the influence of social relationships on the client's mood. The significance of social support and its role in coping with challenging situations are explored, guiding the client in identifying and strengthening their supportive social networks. The module culminates in integrating themes from previous sessions, employing exercises to teach assertive communication skills, aiding in

JAYPS Adolescent and Youth Psychological Studies E-ISSN: 2981-2526

the establishment of satisfying and healthy relationships. The therapy concludes with a review and synthesis of the main themes from each module. In the final session, an evaluation of the therapeutic experience is conducted with the participant to identify strengths and successes achieved. Recommendations for follow-up and areas for continued work are discussed with the participant, ensuring a comprehensive and reflective closure to the therapy process.

2.3.2. Schema Therapy

Schema Therapy sessions were implemented according to Young's (2003) standard protocol, validated in Iran by Hashemi and colleagues (2016), comprising 10 weekly 90-minute individual sessions (Hashemi et al., 2016; Young et al., 2003).

Session 1: Establishing the Therapeutic Framework

The first session is crucial for building a rapport between the therapist and the client, laying the groundwork for a therapeutic alliance. It involves discussing the principles and agreements of therapy, such as punctuality, confidentiality, participation, and homework assignments. This session also introduces the client to the basics of major depressive disorder, including self-monitoring tasks to be done at home, and sets the expectations for the therapeutic journey.

Session 2: Introduction to Emotional Schema Model

In the second session, clients are familiarized with the concept of emotional schemas, providing a foundational understanding of how deep-seated emotional patterns influence their thoughts, feelings, and behaviors. This socialization process to the emotional schema model sets the stage for more in-depth exploration and intervention in subsequent sessions.

Session 3: Interpersonal Skills and Problem-Solving

This session focuses on developing interpersonal effectiveness skills and introducing strategies for coping with problems. Group members learn about the importance of interpersonal efficacy and are introduced to coping strategies for navigating challenges, enhancing their ability to interact effectively with others and address issues constructively.

Session 4: Emotional Validation

The fourth session is dedicated to emotional validation, identifying erroneous emotional beliefs and standards for emotional validation, and addressing the concept of invalidation. It involves exploring responses to invalidation, developing more adaptive strategies for dealing with invalidation, and teaching compassionate self-validation techniques to group members.

Sessions 5 & 6: Emotional Belief Revision and Cognitive Reconstruction

These sessions delve into examining and revising dysfunctional emotional beliefs and cognitive restructuring. Participants are aided in accessing primary or foundational maladaptive emotional schemas, encouraged to accept these emotions and schemas, and taught to identify and challenge dysfunctional emotional beliefs in various situations. The origins of these beliefs are explored, and emotional efficacy training is provided.

Sessions 7 & 8: Mindfulness

Mindfulness techniques are introduced and taught, providing behavioral strategies for reducing emotional intensity and distress. These sessions offer a variety of mindfulness practices and behavioral strategies aimed at managing mild to moderate emotional states, facilitating a greater awareness and presence.

Session 9: Acceptance, Willingness, and Problem-Solving

Focusing on the acceptance of primary emotions and foundational maladaptive emotional schemas, this session facilitates the reconstruction of emotional schemas. It enhances emotional awareness and introduces problem-solving strategies, emphasizing the importance of accepting difficult emotions and schemas as a step towards transformation.

Session 10: Review and Therapy Conclusion

The final session is a review of the therapy sessions, where key insights and learning points are revisited. This session serves as a conclusion to the therapy, summarizing the journey and discussing the progress made. It offers an opportunity to reflect on the therapy experience, acknowledge growth, and plan for maintaining gains and addressing future challenges.

2.4. Data analysis

Data were analyzed using repeated measures ANOVA and Bonferroni tests, with all statistical analyses conducted using SPSS version 24, and the significance level set at 5%.

3. Findings and Results

In this study, 45 patients diagnosed with major depressive disorder participated across two intervention groups and one control group (15 individuals per group). In the cognitive-behavioral therapy (CBT) intervention group, 60% of the

JAYPS Adolescent and Youth Psychological Studies E-ISSN: 2981-2526

participants were female and 40% were male. Similarly, the schema therapy intervention group consisted of 60% females and 40% males, whereas the control group comprised 80% females and 20% males. The mean age (and standard deviation) of patients across the respective groups were as follows: 31.53 years (SD = 7.64) for the CBT intervention group, 31.40 years (SD = 7.18) for the schema therapy intervention group, and 32.02 years (SD = 7.43) for the control group. Table 1 presents descriptive statistics for participants in the intervention groups (the first group undergoing CBT and the second undergoing schema therapy) and the control group.

Table 1

Descriptive Indices in the First Intervention Group (Cognitive Behavioral Therapy), Second Intervention Group (Schema Therapy), and Control Group

Group	Variable	Pre-test		Post-test		Follow-up	
		Mean	SD	Mean	SD	Mean	SD
Intervention 1 (CBT)	Adaptive Emotion Regulation	24.73	2.58	39.67	2.55	43.87	3.04
	Maladaptive Emotion Regulation	31.93	1.39	21.47	1.36	17.47	1.51
Intervention 2 (Schema Therapy)	Adaptive Emotion Regulation	25.93	2.76	35.33	3.39	38.13	2.07
	Maladaptive Emotion Regulation	32.93	1.67	24.00	1.77	20.47	1.64
Control	Adaptive Emotion Regulation	24.93	2.19	23.53	2.83	23.80	1.70
	Maladaptive Emotion Regulation	32.07	1.44	31.13	2.29	31.00	1.13

Descriptive statistics for the three groups studied, shown in Table 1, reveal changes in emotion regulation scores (both adaptive and maladaptive strategies) from pre-test to follow-up for the CBT and schema therapy groups compared to the control group. The Kolmogorov-Smirnov test was used to examine emotion regulation (adaptive and maladaptive strategies), indicating no significant deviation from normal distribution in scores across the three stages of pre-test, post-test, and follow-up ($P<0.05$). Box's test was employed to check the homogeneity of variance-covariance matrices, indicating homogeneity for emotion regulation strategies (adaptive strategies: $P=0.725$, $F=0.73$; maladaptive strategies: $P=0.268$, $F=1.21$). The Mauchly's test of sphericity was satisfied for both adaptive ($P=0.908$) and maladaptive ($P=0.847$) strategies, allowing for the use of repeated measures ANOVA.

Table 2

Results of Repeated Measures ANOVA with Within-Group and Between-Group Factors for the Emotion Regulation Variable (Adaptive and Maladaptive Strategies)

Factor	Source of Variation	Mean Squares	Sum of Squares	Degrees of Freedom	F	Significance	Effect Size
Adaptive Emotion Regulation	Within Group	Time Stages	2484.64	2	1242.32	187.05	<0.001
		Time Stages*Group Interaction	1790.79	4	447.70	67.41	<0.001
		Error	557.91	84	6.64		
	Between Group	Group	3518.06	2	1759.03	243.70	<0.001
		Error	303.16	42	7.22		
Maladaptive Emotion Regulation	Within Group	Time Stages	2093.70	2	1046.85	367.69	<0.001
		Time Stages*Group Interaction	829.14	4	207.29	72.81	<0.001
		Error	239.16	84	2.85		
	Between Group	Group	1448.95	2	724.47	351.45	<0.001
		Error	86.58	42	2.06		

A summary of the repeated measures ANOVA results in Table 2 for within-group and between-group factors for adaptive and maladaptive emotion regulation shows significant F values for the effect of time stages (from pre-test to follow-up) on the emotion regulation variable ($P<0.001$), indicating significant differences in emotion

JAYPS Adolescent and Youth Psychological Studies E-ISSN: 2981-2526

regulation scores at pre-test, post-test, and follow-up among intervention and control groups. Furthermore, for the between-group factor, the F value was significant at a level of P<0.001, indicating significant differences in the mean scores of emotion regulation variables (adaptive and maladaptive strategies) examined with Bonferroni post hoc test.

Table 3

Bonferroni Post Hoc Test Results for the Emotion Regulation Variable (Adaptive and Maladaptive Strategies)

Variable	Stage	Mean Difference	Standard Error	Significance
Adaptive Emotion Regulation	Pre-test - Post-test	-7.64	0.56	<0.001
	Pre-test - Follow-up	-10.07	0.53	<0.001
	Post-test - Follow-up	-2.42	0.54	<0.001
Group	CBT - Schema Therapy	2.95	0.57	<0.001
	CBT - Control	12.00	0.56	<0.001
	Schema Therapy - Control	9.04	0.55	<0.001
Maladaptive Emotion Regulation	Pre-test - Post-test	-6.77	0.35	<0.001
	Pre-test - Follow-up	-9.33	0.37	<0.001
	Post-test - Follow-up	-2.56	0.35	<0.001
Group	CBT - Schema Therapy	-2.18	0.30	<0.001
	CBT - Control	-7.78	0.31	<0.001
	Schema Therapy - Control	-5.60	0.30	<0.001

Findings in Table 3 indicate significant differences between adaptive and maladaptive emotion regulation scores from pre-test to post-test and follow-up, with differences between post-test and follow-up scores also being significant. Comparison of adjusted mean scores showed that maladaptive emotion regulation scores at pre-test were lower than at post-test and follow-up. Moreover, a comparison between the first and second intervention groups and the control group revealed that adaptive and maladaptive emotion regulation scores in both intervention groups were lower than in the control group. Additionally, the calculated F value for the interaction between stages and group for the effect of stages (pre-test, post-test, and follow-up) among the three intervention and control groups on adaptive and maladaptive emotion regulation variables was significant at P<0.01, indicating significant differences in mean scores of adaptive and maladaptive emotion regulation at pre-test, post-test, and follow-up among the three groups.

4. Discussion and Conclusion

The purpose of this study was to compare the effectiveness of cognitive behavioral therapy (CBT) and schema therapy on the cognitive regulation of emotion in patients with major depressive disorder. The findings indicated that both CBT and schema therapy were effective in improving emotional regulation in patients, and this effectiveness was maintained during a one-month follow-up period. Moreover, there was a significant difference in the effectiveness of these two methods in regulating emotions, with CBT being more effective than schema therapy.

The results demonstrating the effectiveness of CBT in improving cognitive emotional regulation in depressed patients are consistent with the previous studies (Aghaziarati et al., 2023; Azimi et al., 2017; Babolhavaeji et al., 2018; Bagherinia et al., 2015; Bennebroek Evertsz et al., 2017; Caletti et al., 2022; Carter et al., 2013; Claro et al., 2015; Cook et al., 2019; Delaparte et al., 2020; Fassbinder et al., 2016; Feldman, 2007; Ghorbani-Amir et al., 2019; Hajhosseini et al., 2021; Hajiadineh & Mozafaripoor, 2018; Hannesdottir & Ollendick, 2007; Iri et al., 2019; Joormann & Stanton, 2016; Kazemi Rezaei et al., 2019; Khatibi et al., 2023; Kopf-Beck et al., 2020; Moeinoddini et al., 2021; Moloud et al., 2022; Niazi et al., 2019; Shiroodaghaei et al., 2020; Shooshtari et al., 2016; Tolin, 2010) In explaining why CBT was more effective than schema therapy in improving emotional regulation, it can be noted that symptoms of mood disorders are divided into affective, cognitive, physiological, and behavioral domains. Affectively, depressed mood, sadness, and hopelessness are fundamental symptoms. Cognitively, decreased concentration, memory deficits, memory bias, and suicidal thoughts are primary symptoms. Physiologically, insomnia, hypersomnia, increased or decreased appetite, and weight disorders are main symptoms, and the behavioral domain includes a reduction in physical activity speed (Bennebroek Evertsz et al., 2017). About 50% to 75% of depressed patients have cognitive impairments and deficits in information processing and

JAYPS Adolescent and Youth Psychological Studies E-ISSN: 2981-2526

memory, sometimes referred to as pseudo-dementia of depression (Bennebroek Evertsz et al., 2017). Cognitive deficits in depression manifest in that, on one hand, numerous reports claim that depressed patients show incapacity in situations requiring alertness for the retrieval of a studied event (explicit memory tasks such as free recall). Meanwhile, other studies have shown that the performance of implicit memory tasks remains untouched in individuals with depression. An interpretation for the distinction between explicit memory deficits and untouched implicit memory performance is that depressed patients have deficiencies in using controlled retrieval strategies and regulating emotions, while these patients do not encounter problems using automatic processes (Bell et al., 2020). Therefore, information related to the memory of depressed patients sometimes emphasizes the presence of explicit memory deficits and sometimes implicit memory deficits, and sometimes focuses on strategies related to cognitive emotion regulation (Bell et al., 2020). CBT has been shown to affect emotional regulation, helping depressed patients to use adaptive emotional cognitive strategies in stressful situations (Azimi et al., 2017). Thus, the proper and optimal use of cognitive-behavioral strategies in emotional regulation is effective in reducing depression, leading to cognitive reconstruction of the problem and, consequently, improving mental health. Since behavioral methodology challenges negative thoughts such as self-blame and replaces them with logical thoughts, including positive reappraisal, it significantly impacts emotional regulation (Aghaziarati et al., 2023).

The findings regarding the effectiveness of schema therapy in improving cognitive emotional regulation in depressed patients are aligned with the previous studies (Abbasi et al., 2020; Bidari & Haji Alizadeh, 2019; Dadomo et al., 2016; Fassbinder et al., 2016; Ghasemkhanloo et al., 2022; Hajhosseini et al., 2021). Schema therapy's effectiveness in improving emotional regulation can be attributed to establishing a deep therapeutic connection, focusing on maladaptive schemas, and replacing them with more effective and adaptive emotional regulation strategies to reduce cognitive dysfunction and depression, especially in reducing the use of maladaptive emotional regulation strategies in depressed patients. Since maladaptive and negative cognitive emotional regulation strategies are associated with the severity and symptoms of depression, a considerable aspect of schema therapy also targets maladaptive and problematic strategies, replacing them with more adaptive and efficient ones. Therefore, schema therapy, by establishing an effective and deep therapeutic relationship and prioritizing patients' emotions and the importance of maladaptive schemas and their modification, strives to correct negative emotional regulation strategies, effectively reducing depression symptoms and cognitive emotional regulation strategies in depressed patients (Ghasemkhanloo et al., 2022). Schema therapy, using key tools such as emotion-focused techniques like mental imagery rescripting and strategies for creating a specific form of therapeutic alliance between therapist and patient, such as the empty chair technique, is effective in treating patients' problems and improving cognitive emotional regulation in patients (Fassbinder et al., 2016).

The findings of the current research demonstrated that both CBT and schema therapy were effective in regulating emotions in patients with major depressive disorder. Each of these interventions independently led to improvements in adaptive and maladaptive emotional regulation strategies, but CBT was more effective than schema therapy in improving these strategies. Overall, employing either of these treatments can significantly contribute to the treatment of emotional regulation in depressed patients and reduce the consequences and damages resulting from its deficiencies.

5. Limitations & Suggestions

This research had limitations, including the inability to blind therapists or patients to the interventions, suggesting the use of two different therapists for future research to mitigate this limitation. Additionally, the study relied solely on self-report measures to assess dependent variables and compare the effectiveness of treatments, recommending the use of behavioral tests (e.g., a behavioral approach task) in future studies. The follow-up period in this study was one month, and it is recommended that future studies consider longer follow-up periods to examine the sustainability of treatment effects.

Acknowledgments

We would like to express our appreciation and gratitude to all those who cooperated in carrying out this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

JAYPS Adolescent and Youth Psychological Studies
E-ISSN: 2981-2526

Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. This article is derived from the first author's Ph.D. dissertation at Islamic Azad University, Boroujerd Branch, and has received ethical approval with the code IR.IAU.B.REC.1401.010 from the Ethics Committee of Islamic Azad University, Boroujerd Branch.

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.

Authors' Contributions

All authors contributed equally.

References

Abbasi, F., Moradi Manesh, F., Naderi, F., & Bakhtiyarpour, S. (2020). The effectiveness of schema therapy on cognitive emotion regulation and quality of life in asthmatic individuals. *medical journal of mashhad university of medical sciences*, *63*(2), 2446-2454. https://doi.org/10.22038/mjms.2020.16987

Abdolmohamadi, K., & Ghadiri, F. (2023). Executive Functions and Sluggish Cognitive Tempo in People with Depressive Disorder and Normal. *Psychology of Exceptional Individuals*, *13*(49), 208-232. https://doi.org/10.22054/jpe.2023.70975.2512

Aghaziarati, A., Ashori, M., Norouzi, G., & Hallahan, D. P. (2023). The effectiveness of mindful parenting on cognitive and behavioral emotion regulation in mothers of children with hearing loss. *KAUMS Journal (FEYZ)*, *27*(1), 825-833. http://dx.doi.org/10.48307/FMSJ.2023.27.1.76

APA, A. P. A. (2022). *Diagnostic And Statistical Manual Of Mental Disorders, Fifth Edition, Text Revision (DSM-5-TR)*. https://doi.org/10.1176/appi.books.9780890425787

Azimi, M., Moradi, A., & Hasani, J. (2017). Effectiveness of cognitive behavioral therapy (Face to face and Internet-based) on Emotional Regulation Strategies of individuals with Comorbidity of insomnia and depression. *rph*, *11*(1), 49-61. https://doi.org/10.29252/rph.11.1.49

Babolhavaeji, M., Khoshnevis, E., & Ghodrati, S. (2018). Effectiveness of cognitive-behavioral therapy on the depression of the women after the husband's betrayal [Research]. *Family Pathology*, *4*(1), 77-88. http://fpcej.ir/article-1-210-en.html http://fpcej.ir/article-1-210-en.pdf

Bagherinia, H., Yamini, M., Javadielmi, L., & Nooradi, T. (2015). Comparison of the Efficacy of Cognitive Behavior Therapy and Mindfulness-based Therapy in Improving Cognitive Emotion Regulation in Major Depressive Disorder. *yums-armaghan*, *20*(3), 210-219. http://armaghanj.yums.ac.ir/article-1-626-en.html

Bamelis, L. L. M., Evers, S. M. A. A., Spinhoven, P., & Arntz, A. (2014). Results of a Multicenter Randomized Controlled Trial of the Clinical Effectiveness of Schema Therapy for Personality Disorders. *American Journal of Psychiatry*, *171*(3), 305-322. https://doi.org/10.1176/appi.ajp.2013.12040518

Bell, T., Montague, J., Elander, J., & Gilbert, P. (2020). "A definite feel-it moment": Embodiment, externalisation and emotion during chair-work in compassion-focused therapy. *Counselling and Psychotherapy Research*, *20*(1), 143-153. https://doi.org/10.1002/capr.12248

Bennebroek Evertsz, F., Sprangers, M. A. G., Sitnikova, K., Stokkers, P. C. F., Ponsioen, C. Y., Bartelsman, J., van Bodegraven, A. A., Fischer, S., Depla, A., Mallant, R. C., Sanderman, R., Burger, H., & Bockting, C. L. H. (2017). Effectiveness of cognitive-behavioral therapy on quality of life, anxiety, and depressive symptoms among patients with inflammatory bowel disease: A multicenter randomized controlled trial. *J Consult Clin Psychol*, *85*(9), 918-925. https://doi.org/10.1037/ccp0000227

Bidari, F., & Haji Alizadeh, K. (2019). Effectiveness of schema therapy on cognitive strategies of emotion, distress bearing and alexithymia in the patients suffering from borderline personality disorder. *Journal of Psychological Studies*, *15*(2), 165-180. https://doi.org/10.22051/psy.2019.19858.1626

Bradley, R. S., Onovbiona, H., U., Rosario, E.-A. d., & Quetsch, L. B. (2023). Current Knowledge of Emotion Regulation: The Autistic Experience. In R. Francisco Manuel Morales (Ed.), *New Insights into Emotional Intelligence* (pp. Ch. 3). IntechOpen. https://doi.org/10.5772/intechopen.1000222

Caldiroli, A., Capuzzi, E., Tagliabue, I., Capellazzi, M., Marcatili, M., Mucci, F., Colmegna, F., Clerici, M., Buoli, M., & Dakanalis, A. (2021). Augmentative Pharmacological Strategies in Treatment-Resistant Major Depression: A Comprehensive Review. *International Journal of Molecular Sciences*, *22*(23).

Caletti, E., Massimo, C., Magliocca, S., Moltrasio, C., Brambilla, P., & Delvecchio, G. (2022). The role of the acceptance and commitment therapy in the treatment of social anxiety: An updated scoping review. *Journal of affective disorders*, *310*, 174-182. https://doi.org/10.1016/j.jad.2022.05.008

Carter, J. D., McIntosh, V. V., Jordan, J., Porter, R. J., Frampton, C. M., & Joyce, P. R. (2013). Psychotherapy for depression: A randomized clinical trial comparing schema therapy and cognitive behavior therapy. *Journal of affective disorders*, *151*(2), 500-505. https://doi.org/10.1016/j.jad.2013.06.034

Claro, A., Boulanger, M.-M., & Shaw, S. R. (2015). Targeting Vulnerabilities to Risky Behavior: an Intervention for Promoting Adaptive Emotion Regulation in Adolescents. *Contemporary School Psychology*, *19*(4), 330-339. https://doi.org/10.1007/s40688-015-0063-9

Cook, L., Mostazir, M., & Watkins, E. (2019). Reducing Stress and Preventing Depression (RESPOND): Randomized Controlled Trial of Web-Based Rumination-Focused Cognitive Behavioral Therapy for High-Ruminating University Students [Original Paper]. *J Med Internet Res*, *21*(5), e11349. https://doi.org/10.2196/11349

Cornelis, M. C., Wang, Y., Holland, T., Agarwal, P., Weintraub, S., & Morris, M. C. (2019). Age and cognitive decline in the

JAYPS Adolescent and Youth Psychological Studies E-ISSN: 2981-2526

UK Biobank. *PLoS One*, *14*(3), e0213948. https://doi.org/10.1371/journal.pone.0213948

Dadomo, H., Grecucci, A., Giardini, I., Ugolini, E., Carmelita, A., & Panzeri, M. (2016). Schema Therapy for Emotional Dysregulation: Theoretical Implication and Clinical Applications [Hypothesis and Theory]. *Frontiers in psychology*, *7*. https://doi.org/10.3389/fpsyg.2016.01987

Darabi, A., Borjali, A., & Azami, Y. A. (2015). Comparison of efficacy of schema therapy cognitive and emotional techniques on early maladaptive schemas reduction of depressed persons. *Clinical Psychology Studies*, *5*(18), 143-166. https://jcps.atu.ac.ir/article_1050.html

Delaparte, L., Denny, B. T., Doré, B., Kishon, R., Mann, J. J., Miller, J. M., Ochsner, K., Oquendo, M. A., Raman, S., Rubin-Falcone, H., & Weber, J. (2020). Neural predictors and effects of cognitive behavioral therapy for depression: the role of emotional reactivity and regulation. *Psychological medicine*, *50*(1), 146-160. https://doi.org/10.1017/S0033291718004154

Fassbinder, E., Schweiger, U., Martius, D., Brand-de Wilde, O., & Arntz, A. (2016). Emotion Regulation in Schema Therapy and Dialectical Behavior Therapy [Methods]. *Frontiers in psychology*, *7*. https://doi.org/10.3389/fpsyg.2016.01373

Feldman, G. (2007). Cognitive and Behavioral Therapies for Depression: Overview, New Directions, and Practical Recommendations for Dissemination. *Psychiatric Clinics of North America*, *30*(1), 39-50. https://doi.org/10.1016/j.psc.2006.12.001

Fries, G. R., Saldana, V. A., Finnstein, J., & Rein, T. (2023). Molecular pathways of major depressive disorder converge on the synapse. *Molecular Psychiatry*, *28*(1), 284-297. https://doi.org/10.1038/s41380-022-01806-1

Garnefski, N., Grol, M., Kraaij, V., & Hamming, J. F. (2009). Cognitive coping and goal adjustment in people with Peripheral Arterial Disease: Relationships with depressive symptoms. *Patient Education and Counseling*, *76*(1), 132-137. https://doi.org/10.1016/j.pec.2008.11.009

Garnefski, N., & Kraaij, V. (2006). Cognitive emotion regulation questionnaire–development of a short 18-item version (CERQ-short). *Personality and individual differences*, *41*(6), 1045-1053. https://doi.org/10.1016/j.paid.2006.04.010

Ghasemkhanloo, A., Atadokht, A., & Sabri, V. (2022). The Effectiveness of Emotional Schema Therapy on Severity of Depression and Cognitive Emotional Regulation Strategies in Major Depression Disorder. *nkums-journal*, *14*(1), 38-44. https://doi.org/10.52547/nkums.14.1.38

Ghorbani-Amir, H.-A., Moradi, O., Arefi, M., & Ahmadian, H. (2019). The Effectiveness of Cognitive Behavioral Components Training on Emotional Cognitive Adjustment, Resilience and Self-Controlling Strategies among Divorced Women. *SALĀMAT-I IJTIMĀĪ (Community Health)*, *7*(2), 166-174. https://doi.org/10.22037/ch.v7i2.25857

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. *J Pers Soc Psychol*, *85*(2), 348-362. https://doi.org/10.1037/0022-3514.85.2.348

Hajhosseini, m., mahdavi, a., & Mohammadi, M. (2021). The Effectiveness of Schema-Based Group Training on Psychological Well-Being of Female Students. *Social Cognition*, *10*(19), 149-164. https://doi.org/10.30473/sc.2021.52484.2533

Hajiadineh, S., & Mozafaripoor, A. (2018). The Effectiveness of Emotional Regulation-based Intervention on Cognitive Emotion Regulation Strategies and Alexithymia in Patients with Coronary Heart Disease [Research]. *Journal of Research in Behavioural Sciences*, *16*(4), 508-516. https://doi.org/10.52547/rbs.16.4.508

Hannesdottir, D. K., & Ollendick, T. H. (2007). The Role of Emotion Regulation in the Treatment of Child Anxiety Disorders. *Clinical Child and Family Psychology Review*, *10*(3), 275-293. https://doi.org/10.1007/s10567-007-0024-6

Hashemi, N., Seyed Morteza, G. B., Khadivi, G., Hashemian Nejad, F., & Ashoori, J. (2016). The effectiveness of cognitive behavioral therapy and schema therapy on happiness and mental health of nursing students. *skums-jcnm*, *5*(1), 12-22. http://78.39.35.47/article-1-329-en.html

Hasin, D. S., Sarvet, A. L., Meyers, J. L., Saha, T. D., Ruan, W. J., Stohl, M., & Grant, B. F. (2018). Epidemiology of Adult DSM-5 Major Depressive Disorder and Its Specifiers in the United States. *JAMA Psychiatry*, *75*(4), 336-346. https://doi.org/10.1001/jamapsychiatry.2017.4602

Iri, H., Makvandi, B., Bakhtiarpour, S., & Hafezi, F. (2019). Comparison of the effectiveness of Acceptance and Commitment Therapy and Dialectical Behavioral Therapy on health anxiety, psychosocial adjustment and cognitive emotion regulation of divorced women. *medical journal of mashhad university of medical sciences*, *61*(supplment1), 79-88. https://doi.org/10.22038/mjms.2019.13786

Joormann, J., & Stanton, C. H. (2016). Examining emotion regulation in depression: A review and future directions. *Behaviour Research and Therapy*, *86*, 35-49. https://doi.org/10.1016/j.brat.2016.07.007

Kazemi Rezaei, S. V., Kakabraee, K., & Hosseini, S. S. (2019). The Effectiveness of Emotion Regulation Skill Training Based on Dialectical Behavioral Therapy on Cognitive Emotion Regulation and Quality of Life of Patients With Cardiovascular Diseases [Original Atricle]. *Journal of Arak University of Medical Sciences*, *22*(4), 98-111. https://doi.org/10.32598/jams.22.4.90

Khatibi, F., Khanmohammasi Otaghsar, A., & Heydari, S. (2023). Effectiveness of Group Cognitive Behavioral therapy on Resilience and Emotion Regulation in Obese Women of Amol City. *Journal of Applied Family Therapy*, *3*(5), 20-34. https://doi.org/10.22034/aftj.2022.329002.1393

Kopf-Beck, J., Zimmermann, P., Egli, S., Rein, M., Kappelmann, N., Fietz, J., Tamm, J., Rek, K., Lucae, S., Brem, A.-K., Sämann, P., Schilbach, L., & Keck, M. E. (2020). Schema therapy versus cognitive behavioral therapy versus individual supportive therapy for depression in an inpatient and day clinic setting: study protocol of the OPTIMA-RCT. *BMC psychiatry*, *20*(1), 506. https://doi.org/10.1186/s12888-020-02880-x

Koppers, D., Van, H., Peen, J., Alberts, J., & Dekker, J. (2020). The influence of depressive symptoms on the effectiveness of a short-term group form of Schema Cognitive Behavioural Therapy for personality disorders: a naturalistic study. *BMC psychiatry*, *20*(1), 271. https://doi.org/10.1186/s12888-020-02676-z

Malhi, G. S., & Mann, J. J. (2018). Depression. *The lancet*, *392*(10161), 2299-2312. https://doi.org/10.1016/S0140-6736(18)31948-2

Malogiannis, I. A., Arntz, A., Spyropoulou, A., Tsartsara, E., Aggeli, A., Karveli, S., Vlavianou, M., Pehlivanidis, A., Papadimitriou, G. N., & Zervas, I. (2014). Schema therapy for patients with chronic depression: A single case series study. *Journal of Behavior Therapy and Experimental Psychiatry*, *45*(3), 319-329. https://doi.org/10.1016/j.jbtep.2014.02.003

Moeinoddini, M., Lotfi Kashani, F., & Shafieabadi, A. (2021). Comparison of the Efficacy of dialectical behavior therapy with integrated therapy based on emotional adjustment and adolescents defense echanisms in reducing pathological of the Internet and mobile. *Scientific Journal of Social Psychology*,

8(57), 25-39. https://psychology.ahvaz.iau.ir/article_680040.html?lang=en

Moloud, R., Saeed, Y., Mahmonir, H., & Rasool, G. A. (2022). Cognitive-behavioral group therapy in major depressive disorder with focus on self-esteem and optimism: an interventional study. *BMC psychiatry*, *22*(1), 299. https://doi.org/10.1186/s12888-022-03918-y

Monjezi, F., Asadpour, I., Rasouli, M., & Zahrakar, K. (2022). the effect of schema therapy-based group conseling on Reducing of Psychological Distress adolescent of divorce. *Journal of Applied Psychological Research*, -. https://doi.org/10.22059/japr.2022.89974

Niazi, E., Mami, S., & Ahmadi, V. (2019). Comparison of the Efficacy of the Integrative Behavioral Couple Therapy and Rational-Emotive Behavior Therapy on the Communication Beliefs among Maladjustment Couples [Original Research Article]. *Middle Eastern Journal of Disability Studies*---, *9*(0), 14-14. http://jdisabilstud.org/article-1-1403-en.html

Nikoogoftar, M., & Sangani, A. (2020). The Effectiveness of schema therapy on rumination, loneliness and general health of divorced women. *Knowledge & Research in Applied Psychology*, *21*(2), 1-12. https://doi.org/10.30486/jsrp.2019.570365.1385

Rastgoo, F., Zarbakhsh Bahri, M. R., & Rahmani, M. A. (2023). Structural Equation Modeling of the Relationship between Ego-Strength, Defense Styles and Object Relations in Cluster B Personality Disorders with the Mediating Role of Cognitive Emotion Regulation [Research]. *Islamic Life Style*, *7*(0), 19-34. http://islamiclifej.com/article-1-1874-en.html

Renner, F., Arntz, A., Peeters, F. P. M. L., Lobbestael, J., & Huibers, M. J. H. (2016). Schema therapy for chronic depression: Results of a multiple single case series. *Journal of Behavior Therapy and Experimental Psychiatry*, *51*, 66-73. https://doi.org/10.1016/j.jbtep.2015.12.001

Rosello, J., & Bernal, G. (2007). Treatment manual for cognitive behavioral therapy for depression. *Adaptation for Puertorican Adolescents. Rio Piedras: University of Puerto Rico*. https://i4health.paloaltou.edu/downloads/CBT_adolescents_individual_manual_eng.pdf

Shiroodaghaei, E., Amir Fakhraei, A., & Zarei, E. (2020). Comparison of the Effectiveness of Cognitive-Behavioral Play Therapy and Parent-Child Interaction Therapy on Executive Functions and Parent-Child Interaction in Children with Oppositional Defiant Disorder [Research]. *Quarterly Journal of Child Mental Health*, *7*(2), 79-95. https://doi.org/10.29252/jcmh.7.2.8

Shooshtari, A., Rezaee, A., & Taheri, E. (2016). The effectiveness of cognitive-behavioral group therapy on divorced women's emotional regulation, meta-cognitive beliefs, and rumination. *Journal of Fundamentals of Mental Health*, *18*(6), 321-328. https://doi.org/10.22038/jfmh.2016.7792

Stephanou, K., Davey, C. G., Kerestes, R., Whittle, S., & Harrison, B. J. (2017). Hard to look on the bright side: neural correlates of impaired emotion regulation in depressed youth. *Social Cognitive and Affective Neuroscience*, *12*(7), 1138-1148. https://doi.org/10.1093/scan/nsx039

Tolin, D. F. (2010). Is cognitive–behavioral therapy more effective than other therapies?: A meta-analytic review. *Clinical psychology review*, *30*(6), 710-720. https://doi.org/10.1016/j.cpr.2010.05.003

Visted, E., Vøllestad, J., Nielsen, M. B., & Schanche, E. (2018). Emotion Regulation in Current and Remitted Depression: A Systematic Review and Meta-Analysis [Systematic Review]. *Frontiers in psychology*, *9*. https://doi.org/10.3389/fpsyg.2018.00756

Young, J., & Brown, G. (2017). *Young schema questionnaire-long form 3 (YSQ-L3)*. https://psychology-training.com.au/wp-content/uploads/2017/04/Young-Schema-Questionnaire-L3.pdf

Young, J. E., Klosko, J. S., & Weishaar, M. E. (2003). *Schema Therapy: A Practitioner's Guide*. Guilford Publications. https://books.google.nl/books?id=vScjGGgJEZgC

JAYPS Adolescent and Youth Psychological Studies
E-ISSN: 2981-2526