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Comparing the Efficacy of Schema Therapy and Acceptance and Commitment Therapy (ACT) in Negative Mood, Psychological Resilience, and Quality of Life in Women with Type 2 Diabetes

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ABSTRACT

Objective: Individuals with Type 2 Diabetes often experience conventional emotions such as anxiety, negative mood, decreased resilience, and quality of life. Therefore, the purpose of the current research was to compare the effectiveness of Schema Therapy and Acceptance and Commitment Therapy (ACT) in reducing negative mood, enhancing psychological resilience, and improving the quality of life in women with Type 2 Diabetes.
Materials and Methods: The research method was applied in terms of objective and quasi-experimental in terms of data collection method. The statistical population of this study included women with Type 2 Diabetes in Tehran during the first half of 2021. The sample size for this part of the research was 30, considering the nature of the study method. The research tools included the Catanzaro and Mearns Negative Mood Questionnaire, the UCLA Psychological Resilience Questionnaire, the 36-Item Short Form Health Survey (SF-36), Schema Therapy, and Acceptance and Commitment Therapy.
Findings: Based on the findings of the current research, it was determined that Schema Therapy was effective in reducing the negative mood of women with Type 2 Diabetes in Tehran. Acceptance and Commitment Therapy was also effective in reducing the negative mood of these women. Additionally, Schema Therapy was found to be effective in enhancing the resilience of women with Type 2 Diabetes in Tehran, as was Acceptance and Commitment Therapy. Both therapies were also effective in improving the quality of life of these women. Furthermore, it was determined that Acceptance and Commitment Therapy was more effective than Schema Therapy.
Conclusion: The findings demonstrated significant improvements in all three variables for both therapeutic approaches. Schema Therapy showed marked effectiveness in enhancing psychological resilience and quality of life, while ACT was particularly effective in reducing negative mood and improving overall well-being.
Keywords: *Schema Therapy, Acceptance and Commitment Therapy, Negative Mood, Psychological Resilience, Quality of Life, Women with Type 2 Diabetes in Tehran*

1. Introduction

Diabetes is one of the most common metabolic diseases with debilitating complications, characterized by a chronic and insidious course. The chronic nature of diabetes and its potential complications often lead to significant financial costs and reduced quality of life (Seyyedjafari et al., 2020). The prevalence of this disease is increasing in our country (Nikpour et al., 2021), and it is a significant risk factor for increased cardiovascular complications and mortality (Niroomandi et al., 2020). More than 150 million people worldwide are afflicted with this disease, and in Iran, over 4 million people are affected (Hosseini et al., 2021). Type 2 Diabetes is characterized by insulin resistance and a relative deficiency of insulin, accounting for about 90% of diabetes cases (Nikpour et al., 2021). The experiential steps for women with Type 2 Diabetes include: feelings of denial and non-acceptance of reality (Al Ubaidi, 2017), psychological resilience (Beam et al., 2017), feelings of unrest, sorrow (Damota, 2019), anger, and coping with stress (Nilsen et al., 2020). Women with Type 2 Diabetes suffer from a high rate of psychiatric problems such as depression, anxiety, personality disorders, and disruption in primary psychological resilience. The majority of women with Type 2 Diabetes in Tehran have high depression (Brand et al., 2019), high anxiety (Brodbeck et al., 2017), and also high psychological resilience (Carmela et al., 2019), leading to decreased happiness, satisfaction with life, quality of life, mental health, and consequently increased depression.

Negative mood encompasses three states: depression, anxiety, and anger. Negative mood is a long-term state alongside irritability or hopelessness, leading to reduced activities of an individual, diminishing their capabilities, and experiencing a colorless and cold life (Dijkshoorn et al., 2021). Negative mood is a common and very natural phenomenon experienced by all individuals in a way that their mood becomes constricted due to a subject, lacking the patience and motivation for their activities, feeling very sad and upset about a specific matter, becoming sorrowful every time they think about it, and this negative state makes them listless (Takahashi et al., 2018). Negative mood accelerates the spread and severity of psychiatric disorders, stressors, and harmful health behaviors (eating habits, alcohol consumption, medication, and obesity) (Ebrahimi et al., 2023; Sangani & Dasht Bozorgi, 2018). Women with Type 2 Diabetes may feel distressed, emptiness, psychological resilience, helplessness, worthlessness, shame, or restlessness. They may lose their enthusiasm for activities that were once pleasurable, lose concentration, struggle with memory and decision-making, encounter problems in their relationships (Maddahi & Maddah, 2014). A woman with Type 2 Diabetes becomes sad with the slightest issue, cries, and living with these individuals is very sorrowful and upsetting. These women have excessive rumination and cannot stop their negative thoughts, constantly living in the negative past (Mahmoudpour et al., 2021). They are not optimistic about the future and do not strive to overcome challenges, thus not developing a sense of competence, and are constantly dissatisfied with their life, showing much aggression (Mahmoudpour et al., 2021). Women with Type 2 Diabetes experience numerous consequences such as fear, depression, nervous tensions. They also suffer from severe depression and stress, feeling that the world has become unbearable for them. Some women with Type 2 Diabetes also regress in psychological resilience and suffer from nervous disorders, which increasingly torments them day by day (Nilsen et al., 2020).

In recent years, positive psychology, focusing on human talents and capabilities (rather than disorders and abnormalities), has gained attention among psychologists. This approach ultimately aims to identify topics and methods that lead to well-being and happiness. Therefore, factors that lead to better human adaptation to the needs and threats of life are the fundamental subject of research in positive psychology. Among these, the concept of resilience holds a special place in the fields of family psychology and mental health, with increasing related research day by day (Rajabi, 2018). Resilience is a type of personal style encompassing a set of psychological traits, often defined as an individual's ability to face life's negative events, stay healthy, and flexibly deal with life's challenges (Kuhlthau et al., 2020; Ziarko et al., 2019). It's not just about passive resistance to harm or threatening conditions but being an active and constructive participant in one's environment. Resilience is the capacity to bounce back from social, financial, or emotional challenges and indicates an individual's ability to readjust in the face of grief, trauma, adverse conditions, and life stressors (Saberi Fard & Hajiarbabi, 2019). Psychological resilience, a topic of significant attention in scientific forums in recent years, leads to increased life satisfaction, reduced quality of life, and mental health (Johnco et al., 2014) and is key to problem-solving in difficult life situations (Golestanifar & Dashtbozorgi, 2020). Psychological resilience paves the way for overcoming psychological problems (Nikoogoftar & Sangani, 2020).

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One aspect of positive psychology is quality of life, which is a sense of well-being (Taziki et al., 2021). Quality of life contributes to health and happiness in individuals and their enjoyment of a healthy life (Bongyoga & Risnawaty, 2021; Mofid et al., 2017). Quality of life is a concept that has seen significant efforts in definition and objective measurement over the past three decades (Hamel, 2019). Having an ideal life has always been and remains a human aspiration. Quality of life, as a key pillar of the family system, can play a significant role in life satisfaction and facilitate the realization of one of the most important human desires. Conversely, lack of quality of life can be a risk factor for a healthy, happy, mentally rich lifestyle, and in a word, a deviation from the mission of the family (Taziki et al., 2021).

Therefore, it is necessary to select a treatment for these individuals that can lead to an increase in psychological resilience and quality of life and a decrease in negative mood. Acceptance and Commitment Therapy (ACT) includes a combination of metaphors, mindfulness skills, a wide range of experiential exercises, and guided behavioral interventions (Khaleghi Kiadahi et al., 2022; Walser et al., 2015) and is applied by the therapist based on the client's values. The goal of this therapeutic approach is to assist the client in achieving a more meaningful and satisfying life, through increased acceptance and psychological flexibility (Khaleghi Kiadahi et al., 2022; Walser et al., 2015). Empirical evidence on the effect of Acceptance and Commitment Therapy on various mental disorders is increasing. For example, the efficacy of this method in disorders such as depression and suicidal thoughts (As'hab et al., 2022; Azizi & Ghasemi, 2017), obsession (Asli Azad et al., 2019), and anxiety (Eifert et al., 2009; Mirzaeidoostan et al., 2019; Yang et al., 2020) has been demonstrated. Additionally, Schema Therapy, a modern and integrated therapy primarily based on the expansion of concepts and methods of classical schema therapy, has proven its effectiveness in various studies (Hedayatimoghadam & Bakhshipour, 2022; Izadi & Mokhtari, 2021; Khoshnevis et al., 2018; Koppers et al., 2020; Mokhtarinejad et al., 2020; Pilkington et al., 2023; Rasouli Rad et al., 2023; Talaeezadeh et al., 2023). Schema Therapy integrates the principles and foundations of cognitive-behavioral schools, attachment, Gestalt, object relations, constructivism, and psychoanalysis into a valuable therapeutic and conceptual model (Young et al., 2006). Schema Therapy addresses five basic human needs that arise due to unmet childhood needs: 1) the need for security, stability, love, and acceptance; 2) the need for autonomy and competence; 3) the need for freedom of expression; 4) the need for spontaneity and play; and 5) the need for self-control. Although the intensity of these needs varies among individuals, all people possess these needs. The aim of treatment in the Schema Therapy model is to enable the fulfillment of these basic needs in an adaptive and flexible manner (Johns, 2005).

This research aims to test the hypotheses that Acceptance and Commitment Therapy is effective in reducing negative mood in women with Type 2 Diabetes in Tehran; Schema Therapy is effective in reducing negative mood in these women; Acceptance and Commitment Therapy is effective in enhancing psychological resilience in these women; Schema Therapy is effective in enhancing psychological resilience in these women; Acceptance and Commitment Therapy is effective in improving the quality of life in these women; Schema Therapy is effective in improving the quality of life in these women.

2. Methods and Materials

2.1. *Study design and Participant*

In this research, to compare the impact of Acceptance and Commitment Therapy and Schema Therapy, a quasi-experimental method was used. The statistical population of this study included women with Type 2 Diabetes in Tehran in the first half of 2021. The sample size for this part of the research was 30, based on the nature of the study method, so 30 individuals were selected as the sample. Given the three-group nature of the samples in the present study (two treatment protocols and one control group), 10 individuals were determined for each group. In this study, sampling was done through convenience, and subjects were randomly assigned to groups.

After selecting the sample group, individuals in each group were randomly placed in two experimental groups of 10 each (Acceptance and Commitment Therapy, and Schema Therapy) and one control group. Thus, three experimental groups were formed. Each treatment consisted of 10 one-hour sessions conducted individually and weekly. In this research, three absences were considered as a dropout criterion, meaning withdrawal from treatment. Entry and exit conditions for the sample were such that individuals were included in the sample group if their negative mood score on the test was above average; their psychological resilience and quality of life scores in the test were below average; their depression was not psychotic; they had no severe personality disorder; had not received other psychological treatments; and consented to participate in the

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research. Scores of negative mood and psychological resilience before and during intervention were obtained and compared as pre-test and post-test. Subsequently, a 6-month follow-up was conducted on the samples.

2.2. Measures

2.2.1. Negative Mood

This questionnaire was developed by Catanzaro and Mearns in 1990. The scoring of negative mood is based on 30 items on a 5-point Likert scale, where the scores of questions 3, 5, 8, 9, 11, 14, 18, 19, 21, 22, 24, 25, 27, 28, and 30 are reversed. This questionnaire is unidimensional. Its validity was confirmed in Madahi et al.'s research (2014), and its reliability was reported as above 0.7 (Maddahi & Maddah, 2014).

2.2.2. Psychological Resilience

The Psychological Resilience Questionnaire was developed by Russell et al. (1980) and consists of 20 questions in a 4-option format, with 10 negative and 10 positive statements. In this questionnaire, "never" scores 1, "rarely" scores 2, "sometimes" scores 3, and "always" scores 4. However, the scoring of questions 1, 5, 6, 9, 10, 15, 16, 19, 20 is reversed. The range of scores is between 20 (minimum) and 80 (maximum). Therefore, the average score is 50. A score higher than the average indicates more severe loneliness. The reliability of this test in the revised new version was reported as 78%. Test-retest reliability by Russell et al. (1980) was reported as 89% (Russell et al., 1980).

2.2.3. Quality of Life

The SF-36 Quality of Life Questionnaire consists of 36 questions and is made up of 8 subscales, each composed of 2 to 10 items. The eight subscales are: Physical Functioning (PF), Role Limitations due to Physical Health (RP), Role Limitations due to Emotional Problems (RE), Energy/Fatigue (EF), Emotional Well-being (EW), Social Functioning (SF), Pain (P), and General Health (GH). Additionally, the combination of subscales yields two overall subscales named Physical Health and Mental Health. In this questionnaire, a lower score indicates a lower quality of life, and vice versa. To obtain the 8 subscales, the questions related to each subscale should be added up and then divided by the number of questions. Therefore, the scores for each subscale will be between 0 and 100. In Montazeri et al.'s project (2005), the content, face, and criterion validity of this questionnaire were assessed as appropriate. The Cronbach's alpha coefficient calculated in Montazeri et al.'s research (2005) for this questionnaire was estimated to be above 0.7 (0.78) (Montazeri A et al., 2006).

2.3. Intervention

Schema Therapy and Acceptance and Commitment Therapy, like other psychological treatments, have multiple treatment protocols for various mental disorders and illnesses. In this research, the treatment protocol based on Acceptance and Commitment Therapy by Eifert et al. (2009) (Eifert et al., 2009) and Schema Therapy by Young (Young et al., 2006) was used. These therapeutic methods were individually implemented by the researcher and include the following general principles:

2.3.1. Schema Therapy

Schema Therapy, across ten sessions, is designed to identify and modify deep-rooted negative patterns or schemas. The initial sessions typically involve the identification of these schemas, which are often rooted in early life experiences. The therapist helps the client to understand how these schemas are influencing their current thoughts, feelings, and behaviors. Middle sessions are focused on the emotional aspect, helping clients to connect with their emotions associated with these schemas and to heal from past traumas using techniques like imagery rescripting. The therapy gradually moves towards the development of healthy coping strategies and behaviors to replace maladaptive schema modes. The final sessions aim to reinforce these new patterns, ensuring that clients have the tools to maintain these changes and cope with life challenges in healthier ways.

2.3.2. ACT

Acceptance and Commitment Therapy (ACT) over ten sessions focuses on enhancing psychological flexibility and mindfulness. The first sessions typically introduce clients to the concept of cognitive defusion, where they learn to observe their thoughts without getting entangled in them. This is followed by sessions on accepting uncomfortable feelings and thoughts rather than avoiding them. Midway, the therapy emphasizes identifying personal values and committed actions aligned with these values. Later sessions are dedicated to developing mindfulness skills, enabling

clients to stay present in the moment and engage fully with their life. The final sessions consolidate these skills, encouraging clients to continue practicing these techniques in their daily lives to manage negative moods, reduce stress, and improve overall mental well-being.

2.4. Data Analysis

In the current study, the collected data were analyzed according to the research method through questionnaires using appropriate statistical techniques and presented using descriptive and inferential statistical techniques. Descriptive statistics included measures such as mean and standard deviation, and inferential statistics used analysis of covariance.

3. Findings and Results

The demographic characteristics of the study were focused on women with Type 2 Diabetes residing in Tehran. The sample size consisted of 30 participants, divided equally among three groups: Acceptance and Commitment Therapy (ACT), Schema Therapy, and a control group. Each group contained 10 participants, all women diagnosed with Type 2 Diabetes. The age range, educational background, and other demographic details were not specified in the provided data. This demographic representation provides insights into the impact of these therapies on a specific subset of the population in Tehran.

Table 1

Descriptive Statistics

Variable	Group	Pre-test Mean	Pre-test Standard Deviation	Post-test Mean	Post-test Standard Deviation	Follow-up Mean	Follow-up Standard Deviation
Negative Mood	Acceptance and Commitment Therapy	110.50	2.78	97.50	2.69	98.70	2.52
	Schema Therapy	110.50	2.65	99.80	2.98	100.75	2.75
	Control	87.50	2.20	89.25	2.60	89.35	2.75
Psychological Resilience	Acceptance and Commitment Therapy	45.50	2.90	61.50	2.53	62.70	2.65
	Schema Therapy	46	2.77	59	2.68	61	2.79
	Control	41.50	2.90	43.50	2.50	42.75	1.25
Quality of Life	Acceptance and Commitment Therapy	261.75	5.20	294.50	5.40	290.75	5.90
	Schema Therapy	260.50	5.40	290.75	5.90	290.75	5.90
	Control	250.75	2.25	244.60	2.60	242.75	1.25

The Table 1 presents key findings on the impact of Schema Therapy and Acceptance and Commitment Therapy (ACT) on women with Type 2 Diabetes in Tehran. For negative mood, both therapies showed a decrease in mean scores from pre-test to post-test, with Schema Therapy reducing from 110.50 to 99.80 and ACT from 110.50 to 97.50. Psychological resilience increased in both groups, with Schema Therapy showing an increase from 46 to 59 and ACT from 45.50 to 61.50. For quality of life, the mean scores increased in both therapies, with Schema Therapy improving from 260.50 to 290.75 and ACT from 261.75 to 294.50. These changes indicate the effectiveness of both therapies in improving psychological well-being in the study group.

The results of the Kolmogorov-Smirnov test indicated that the level of significance reported for the normality of negative mood scores was 0.130 or a Kolmogorov-Smirnov statistic of 0.160, which is much greater than the significance level of 0.05, indicating the normal distribution of scores for this variable. The level of significance reported for the normality of psychological resilience scores was 0.139 or a Kolmogorov-Smirnov statistic of 0.303, also greater than 0.05, showing the normal distribution of scores for this variable. For the normality of quality of life scores, the level of significance was 0.215 or a Kolmogorov-Smirnov statistic of 0.240, again larger than 0.05, indicating the normal distribution of scores for this variable.

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Table 2

Summary of Multivariate Analysis of Covariance (MANCOVA) Results for Negative Mood, Psychological Resilience, and Quality of Life in Women with Type 2 Diabetes in Tehran Based on Schema Therapy

Test	Value	F	p	Eta Squared
Pillai's Trace	0.950	672.520	0.01	0.949
Wilks' Lambda	0.032	672.540	0.01	
Hotelling's Trace	21.290	511.990	0.01	
Largest Root	21.290	511.990	0.01	

*p<0.01

According to the results in Table 2, Schema Therapy at a significance level (P < 0.01) had a significant effect on at least one of the variables of negative mood, psychological resilience, and quality of life in women with Type 2 Diabetes in Tehran in the post-test phase. Therefore, the null hypothesis is rejected, and the research hypothesis is confirmed. It is concluded that in this study, Schema Therapy was able to improve negative mood, psychological resilience, and the quality of life of women with Type 2 Diabetes in Tehran. Hence, Schema Therapy was effective on negative mood, psychological resilience, and quality of life in these women.

Table 3

Summary of Univariate Analysis of Covariance (ANCOVA) Results for Psychological Resilience in Women with Type 2 Diabetes in Tehran During Schema Therapy

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F-Value	p
Negative Mood					
Between Groups	6320	1	3160	237.610	< 0.000
Within Groups	544.500	28	15.671		
Total	6864.500	29			
Psychological Resilience					
Between Groups	6320	1	3160	237.610	< 0.000
Within Groups	544.500	28	15.671		
Total	6864.500	29			
Quality of Life					
Between Groups	6210	1	2950	235.450	< 0.000
Within Groups	505.100	28	15.550		
Total	6715.100	29			

According to the results in Table 3, Schema Therapy at a significance level (P < 0.01) significantly impacted resilience, quality of life, and negative mood in women with Type 2 Diabetes in Tehran in the post-test phase. Therefore, the null hypothesis is rejected, and the research hypothesis is confirmed. It is concluded that in this study, Schema Therapy successfully reduced psychological resilience in women with Type 2 Diabetes in Tehran. Thus, Schema Therapy was effective on resilience, quality of life, and negative mood in these women.

Table 4

Summary of Multivariate Analysis of Covariance (MANCOVA) Results for Negative Mood, Psychological Resilience, and Quality of Life in Women with Type 2 Diabetes in Tehran for Acceptance and Commitment Therapy

Test	Value	F	P	Eta Squared
Pillai's Trace	0.899	518.950	0.01	0.960
Wilks' Lambda	0.030	514.750	0.01	
Hotelling's Trace	28.650	518.950	0.01	
Largest Root	28.640	518.985	0.01	

According to the results in Table 4, the intervention based on Acceptance and Commitment Therapy at a significance level (P < 0.01) had a significant effect on at least one of the variables of negative mood, psychological resilience, and quality of life in women with Type 2 Diabetes in Tehran in the post-test phase. Therefore, the null hypothesis is rejected, and the research hypothesis is confirmed. It is concluded that in this study, the intervention based on Acceptance and Commitment Therapy was able to improve negative mood, psychological resilience, and quality of life in these women. Hence, the intervention based on Acceptance and Commitment Therapy was effective on negative mood, psychological resilience, and quality of life in women with Type 2 Diabetes in Tehran.

Table 5

Summary of Univariate Analysis of Covariance (ANCOVA) Results for Negative Mood in Women with Type 2 Diabetes in Tehran During Acceptance and Commitment Therapy

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F-Value	p
Negative Mood					
Between Groups	3500	1	1750	256.650	< 0.000
Within Groups	540.500	28	16.600		
Total	4040.500	29			
Psychological Resilience					
Between Groups	3400	1	1700	240.75	< 0.000
Within Groups	570.500	28	13.700		
Total	3970.500	29			
Quality of Life					
Between Groups	3300	1	1650	245.50	< 0.000
Within Groups	540.600	28	13.200		
Total	3870.200	29			

According to the results in Table 5, the intervention based on Acceptance and Commitment Therapy at a significance level (P < 0.01) had a significant effect on resilience, quality of life, and negative mood in women with Type 2 Diabetes in Tehran in the post-test phase. Therefore, the null hypothesis is rejected, and the research hypothesis is confirmed. It is concluded that in this study, the intervention based on Acceptance and Commitment Therapy successfully reduced psychological resilience in women with Type 2 Diabetes in Tehran. Therefore, the intervention based on Acceptance and Commitment Therapy was effective on negative mood in these women.

Furthermore, since the intervention based on Acceptance and Commitment Therapy showed a greater reduction in negative mood post-test and a greater increase in psychological resilience and quality of life post-test, it can be concluded that this intervention was more effective than Schema Therapy for women with Type 2 Diabetes in Tehran.

4. Discussion and Conclusion

This research investigated the efficacy of Schema Therapy and Acceptance and Commitment Therapy (ACT) on negative mood, psychological resilience, and quality of life in women with Type 2 Diabetes in Tehran. The findings demonstrated significant improvements in all three variables for both therapeutic approaches. Schema Therapy showed marked effectiveness in enhancing psychological resilience and quality of life, while ACT was particularly effective in reducing negative mood and improving overall well-being.

Based on the findings of the current research, it was determined that Schema Therapy has been effective in reducing negative mood in women with Type 2 Diabetes in Tehran. Monjezi and colleagues (2021) in a study reached the conclusion that Schema Therapy has been effective in reducing the negative mood of women with Type 2 Diabetes in Tehran, which aligns with the present research (Monjezi et al., 2022). Furthermore, Schema Therapy was found to be effective in enhancing psychological resilience in women with Type 2 Diabetes in Tehran. Additionally, Schema Therapy was effective in improving the quality of life (Ahmadi et al., 2020) which is in line with the present research. Acceptance and Commitment Therapy (ACT) has been effective in reducing negative mood in women with Type 2 Diabetes in Tehran. Ebrahimi and colleagues (2023) found that ACT is effective in improving sexual function, reducing negative mood, and improving sleep quality in menopausal women, which is consistent with the current research (Ebrahimi et al., 2023). Beem and colleagues (2017) in their research concluded that ACT was effective in

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reducing negative mood in women with Type 2 Diabetes in Tehran, aligning with the current research (Beam et al., 2017). Moreover, ACT was found to be effective in enhancing psychological resilience in women with Type 2 Diabetes in Tehran. Mahmoudpour and colleagues (2021) in a study concluded that ACT is effective in enhancing psychological resilience in adolescents of divorce, which is consistent with the current research (Mahmoudpour et al., 2021). Also, ACT was effective in improving the quality of life of women with Type 2 Diabetes in Tehran. Mofid and colleagues (2017) in a study concluded that ACT is effective in improving the quality of life of incarcerated criminal women in Isfahan, which aligns with the present research (Mofid et al., 2017).

5. Limitations and Suggestions

The study faced several limitations, including a limited sample size and geographical scope, which may affect the generalizability of the findings. The study focused exclusively on women with Type 2 Diabetes in Tehran, which may not represent the broader population. Additionally, the research design did not account for long-term follow-up, limiting the understanding of the enduring effects of the therapies.

Future research should aim to include a more diverse and larger sample to enhance the generalizability of the findings. Studies involving longer follow-up periods would be beneficial to understand the long-term efficacy of these therapies. Exploring these therapeutic approaches in different demographic groups and with various types of psychological and physical health conditions would also be valuable.

The findings suggest that both Schema Therapy and ACT can be effectively implemented in clinical settings for women with Type 2 Diabetes experiencing psychological distress. Healthcare providers should consider integrating these therapies into treatment plans. Additionally, training and resources should be provided to therapists to effectively administer these therapies. Collaboration between mental health professionals and medical practitioners could enhance patient care by addressing both psychological and physical aspects of diabetes.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics Considerations

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

Authors' Contributions

Sara Malek Mohammadi contributed to the conceptualization of the research, participant recruitment, data collection, and the implementation of Schema Therapy. Ahmad Torabi played a significant role in the design and implementation of Acceptance and Commitment Therapy (ACT), data analysis, and interpretation of the results. Zahra Mohseni Nasab, Amineh Khedmati Nojeh Deh Sadat, and Abdolsamad Nikan provided support in participant recruitment, data collection, and the overall coordination of the study. All authors were involved in the review and editing of the manuscript and approved the final version for publication.

Transparency of Data

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

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