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Original Article

Anxiety, Depression, and Stress in Women with Frequent Miscarriage Experiences: Before and After Acceptance and Commitment Therapy

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Abstract

Background: Fertility phenomenon holds great importance in almost all cultures; therefore, failures in this matter can turn into a harmful sensation. This study aimed to study the efficacy of acceptance and commitment therapy on anxiety, depression, and stress in women with frequent miscarriage records.
Methods: The research design of this study was quasi-experimental, including post-test and pre-test types with experiment and control groups. The population of this study consisted of all applicants from Alzahra hospital of Rasht, Iran with frequent miscarriage records in summer 2019. The research sample size comprised 30 women who were chosen through convenience method sampling and were randomly assigned into two groups of control group (15 participants) and experiment group (15 participants). Eight sessions of acceptance and commitment therapy were performed on the experiment group. Lovibond and Lovibond's (1995) scale of depression, anxiety, and stress was applied to collect the data. To analyze the data, one-way ANCOVA was used.
Result: Results revealed that acceptance and commitment therapy was significantly reduced (P=0.001). The mean scores of anxiety (M=27.73±0.79), depression (M=26.73±1.22), and stress (M=27.06±0.59) in the experimental group as compared with control group that were anxiety (28.26±0.96), depression (28±0.75), and stress (28.13±0.83), respectively.
Conclusion: The findings of present study indicated that acceptance and commitment therapy increased the psychological flexibility and led to committed action toward personal values. Therefore, this therapy is applicable for those women with frequent miscarriages to decrease their anxiety, depression, and stress levels.

Keywords: Acceptance and commitment therapy, Miscarriage, Depression, Anxiety, Stress

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1. Introduction

The tendency to have children is one of the fundamental motives in all beings specially humans. If a woman's pregnancy and childbearing efforts fail, it may result in an unpleasant experience and a feeling of inefficiency. Miscarriage is considered a harmful and destructive experience for women both mentally and physically (1) Center of disease control and prevention (CDC) and world health organization (WHO) define miscarriage as pregnancy ending before week 20 or birth of foetus weighed under 500 grams (2). In other words, frequent miscarriage is defined as 3 or more miscarriages before 20th week of pregnancy, which is almost 1 percent of the world population (3). Numerous factors affect miscarriage, such as mother's age, smoking, alcohol abuse, mother's diseases, and vaginal abnormalities (4). This issue is often disregarded despite the fact that women who have miscarriages feel psychological anguish and depressive symptoms (5). According to research, women who experience a miscarriage are more likely to suffer from depression, anxiety, marital conflict, suicidal ideation (6), substance abuse (7), grief and sorrow, anger, guilt and self-blaming, feelings of emptiness and distress, a decrease in self-respect (8), and sleeping disorders (9). More than half of women suffer from different mental and spiritual consequences after a miscarriage for weeks to months (10). Noticeable number of women show a high level of anxiety after miscarriage and face a high risk of post-traumatic stress disorder and obsessive compulsive disorder (11, 12) during 12 weeks after miscarriage. Anxiety is more common and severe than depression. Depression is an extensive and unpleasant agitation, which usually is accompanied by symptoms, such as headaches, sweating, heart rate, and suffocation (13). In post-miscarriage depression, the mother faces loss and sadness, anger, denial, irritability, reduced appetite, and decreased living intuition (14). These types

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of problems and harms, also, can cause stress. Stress can fade person's strength and effect one's activity and put their emotions out of normal and stable level. It also causes the behavioural issues in the shape of anxiety and finally as depression (15). Research showed that psychological support and interferences can improve women's mental welfare after miscarriage (16). In addition to pharmacological treatment, other therapy methods can be used for such a person. Acceptance and commitment therapy is one of these methods. In spite of traditional cognitive-behavioural therapy, this therapy method is not going to change thoughts and emotions but it leads a person to acceptance, acknowledgment, and self-observation (17). In this treatment, people stuffing is considered as a result of psychological inflexibility that comes from avoiding negative experiences (18). Hayes and his colleagues thought that six stages of acceptance, defusing, connecting with the present, values, and committed action will reverse this tendency (19). These procedures result in psychological adaptability (20). This capacity allows individuals to adapt to almost any circumstance (21). In a survey of web-based teaching, the affectivity of acceptance and commitment therapy for improving mental problems in women with trauma was studied, in which (22) results showed an improvement in anxiety, depression, and Post-traumatic stress disorderr symptoms in women. In a study, Monteiro and colleagues showed that the process of acceptance and commitment and self-love in women who are at risk can save them from post-birth depression and anxiety symptoms (23). Study of Ossman and colleagues, with a focus on main acceptance therapy and acting based on commitment, showed that the patients had a better physical and emotional function in comparison with the beginning of therapy; in follow-up, they experienced better therapy achievements (24). In a study, Afshari showed that acceptance and commitment therapy can increase tolerance towards frequent miscarriage in women (25). Accordingly, these subjects had a high level of fear of repeating pregnancy. They referred to the hospital more for physical problems, which it increases negative emotions in them. Therefore, they need to pay more attention (25, 26). Early miscarriage is often a distressing experience that causes various emotional distresses in women, the effects of which last for weeks to months. But, this matter is never taken seriously or even comprehended properly by family, relatives, and even by health care institutions (27). In spite of death in which survivors can express openly grief and share their sorrow and grief, in miscarriage because of few social supports and because of women worrying about their ability to get pregnant again in the future and the possibility of another miscarriage, they are isolated and experience more depression, anxiety, and stress. Therefore, psychological supports and intervention can improve their mental welfare after miscarriage (28). Due to the prevalence of some mental problems, especially anxiety and depression in multiple miscarriages, and to help these groups of people, and following the studies that were done in the field of acceptance and commitment therapy which were effective in treating anxiety disorders, depression and stress, and pregnancy based problems, and also because of the low number of comprehensive studies on stress, depression, and anxiety caused by miscarriage (29); the purpose of this research was to determine whether acceptance and commitment therapy is useful in reducing sadness, anxiety, and stress in women with recurrent miscarriages.

2. Methods

2.1. Study design

The research method of this study is quasi-experimental design with pre-test and post-test including experimental and control groups. The population of this research includes all the women with frequent miscarriages that admitted to Alzahra hospital of Rasht in 2019.

2.2. Participant

The sample was selected using convenience sampling and randomly divided them into the experimental and control groups. The sample size consisted of 30 patients that were consent to participate in the study (n=15 per each group); based on G*Power with effect size (1.60) and alpha (0.05) and power of a test (0.90) (30).

The participants were randomly allocated into the experimental and control groups. Random allocation was done via the balanced block randomization method. Thus, four blocks were used. Having two groups of A and B with four blocks, the block modelling was randomly rotated

as follows: AABB, ABAB, ABBA, BAAB, BBAA, BABA.

All participants volunteered to participate in the research. Inclusion criteria were: having 2 or more miscarriages and having at least a middle school diploma. Also, exclusion criteria included having any other physical disease or psychological disease, other than depression, anxiety, and stress, and receiving mental medication favourable to research purpose.

2.3. Research Tools

DASS-21 Stress, Anxiety, and Depression Questionnaire Stress, anxiety, and depression questionnaire made by Lovibond and Lovibond in 1995 to evaluate stress, anxiety, and depression with 21 questions (30). DASS-21 questionnaire includes three components in which there are 7 questions, each component has a score. The scale for each question is from zero (it does not apply to me) to 3 (it completely applies to me). Since the short form of DASS-21 is the short version (with 21 questions) and the main scale have 42 questions; therefore, the final grade for each component must be doubled. Lovibond and Lovibond (1995) reported questionnaire validity as 0.77 and its reliability for subscales of depression as 0.89, for anxiety as 0.84 and for stress as 0.82, and for total scale as 0.83 (30). In Iran, Cronbach's alpha coefficients for each of 3 subscales of depression, anxiety and stress were reported as 0.93,0.90,0.92, respectively; and content validity was calculated as 0.78 (31).

In Iran, the reliability and validity of this scale were assessed via internal consistency and factor analysis. Also, the validity of the criterion was simultaneously performed with Beck Depression Inventory, Zank Anxiety, and Perceived Stress. In general, the reliability coefficients were very satisfactory and significant at the level of P=0.001. The correlation between DASS depression subscale and Beck depression test was 0.70, between DASS anxiety scale and Zank anxiety was 0.67 and between DASS stress subscale with perceived stress was 0.49. Therefore, according to this research, DASS -21 is qualified for use in psychological research (32). In another study, its content validity was confirmed by estimating the content validity ratio and content validity index as 0.78 and 0.83, respectively (33).

2.4. Procedure

After obtaining the necessary permissions from the related hospital and conducting the clinical interview, the research objectives and methods were explained to the participants, and after obtaining their informed consent, the questionnaires were distributed. The method of answering the questions was explained to them and the confidentiality of the information was emphasized. Participants were recommended that there is no force to continue participation and leaving the study is optional after taking the pre-test from both groups. For experiment group, the acceptance and commitment therapy sessions were held in 8 sessions, each session lasted 90 minutes and was held once a week. However, control group did not receive any training. After finishing training sessions, both groups took the post-test.

A summary of the acceptance and commitment group therapy sessions are presented in Table 1.

2.5. Data Analysis

Covariance analysis test was used by SPSS software. Also, descriptive statistics, such as Mean and standard deviation were applied. To study the homogeneity of variance in the main variable of the study, Levene's test showed that the significance of all variables in the two groups was equal. Then, independent t-test was used to compare the two groups in the pre-test stage and the analysis of covariance was used to compare the two groups in the post-test stage, also, paired t-test was applied to evaluate the change of scores in the pre-test to post-test (within group changes).

3. Result

The study sample included 30 women with the mean age of 27.36±6.35 in the experiment group and 27.07±7 in the control group. Most of the participants did not have a diploma (8 people in the experiment group, 7 people in the control group), had income level less than one million Tomans (12 people in the experimental group, 9 people in the control group), had 2 miscarriages (14 patients in the experiment group, 14 patients in the control group); other descriptive data are reported in Table 2. In Table 2, the experiment and control groups were compared based on demographic variables. The results showed that there was no significant

Table 1: Summery of sessions

First session	Become familiar with treatment processes, making connections with group members, mental training and taking the pre-test
Second session	Talking about experiences and evaluating them, efficiency as criteria for measuring action and creating constructive despair, giving next session task, mindful sitting
Third session	Reviewing previous session task, expressing control as a problem of measuring performance, giving next session task, mindful sitting
Forth session	Reviewing previous session task, introducing fusion and non-fusion techniques, intervening in the performance of problem-solving language chains, reducing fusion with thoughts and emotions, giving next session task, mindful sitting
Fifth session	Reviewing previous session task, observing oneself as a context, weakening self-conceptualization and expressing oneself as an observer, measuring the performance of showing separation between oneself, inner experiences and behavior, giving next session task, mindful sitting
Sixth session	Reviewing previous session task, contrast between experience and mind, modeling came out of mind and learning to experience within as a process, giving next session task, mindful sitting
Seventh session	Reviewing previous session task, measuring performance, explaining the concept of value, describing the dangers of focusing on results, and discovering the practical values of life, giving next session task, mindful sitting
Eighth session	Reviewing previous session task, measuring performance, explaining the concept of value using metaphors and allegories, demonstrating the dangers of focusing on results, and discovering the practical values of life, taking post-test, giving thanks and appreciation to participants for taking part in this research

Table 2: Comparison of the background information between the two groups

Groups		Intervention		Control		Statistic test	P value
Variables		n	%	n	%		
Education	Under diploma	8	53.3	7	46.7	0.178[a]	0.915
	Diploma	3	20	3	20		
	Bachelor degree	4	26.7	5	33.3		
Job	Yes	3	20	1	6.7	1.154[b]	0.283
	no	12	80	14	93.3		
Income	<1	12	80	9	60	2.571[a]	0.276
	2-3	3	20	4	26.7		
	>3	0	0	2	13.3		
Number of abortions	2	14	93.3	14	93.3	0[b]	1
	>2	1	6.7	1	6.7		
Age (year); mean (SD)		27.13 (6.52)		27.07 (7.02)		0.025[c]	0.979
Average of marriage (years) mean (SD)		2.53 (1.30)		2.80 (1.65)		-0.490[c]	0.628

a Chi-square test; b Fisher's Exact Test; c Independent Sample t-test

difference between two groups of women in terms of demographic characteristics of education level (P=0.915), job (P=0.283), income (P=0.276), number of miscarriages (P>0.99), Age (P=0.979), duration of marriage (P=0.628) and two groups were identical (P>0.05).

Table 3 represent that mean of depression in the pre-test stage was 28±0.75 in the control group and 27.93±0.70 in the experiment group. The mean of anxiety variable in the pre-test stage was 28.80±0.77 in the control group and 28.73±0.59 in the experiment group. The mean of stress variable in the pre-test stage was 28.73±0.88 in the control group and 28.66±0.97 in the experiment group.

According to the independent t-test in the pre-test stage, there was no significant difference between the control and experiment groups in the variables of depression (P=0.804), anxiety (P=0.793), and stress (P=0.846).

The results of the analysis of covariance showed that there was a significant difference between the scores of anxiety (P=0.001), depression (P=0.002), and stress (P=0.001) in the groups of experiment and control after training about acceptance and commitment-based therapy.

Moreover, based on paired t-test, there was a significant difference between the scores of the experiment group in the pre-test and post-test stages in the variables of depression (P=0.001), anxiety (P=0.001), and stress (P=0.001).

Table 3: Comparison of depression, anxiety and stress scores between intervention and control groups before and after acceptance and commitment training

Variables	Time	Before the Intervention	After the Intervention	Within group differences	Paired t-test	P value
	Groups	M±SD	M±SD			
Depression	Intervention	27.93±0.70	26.73±1.22	1.200	4.583	0.001
	Control	28±0.75	28±0.75	0	0	1
	Statistic test	-0.250[a]	12.305[b]			
	P value	0.804	0.002			
Anxiety	Intervention	28.73±0.59	27.73±0.79	1	4.183	0.001
	Control	28.80±0.77	28.26±0.96	0.533	2.256	0.041
	Statistic test	-0.265[a]	2.652[b]			
	P value	0.793	0.001			
Stress	Intervention	28.66±0.97	27.06±0.59	1.600	6.287	0.001
	Control	28.73±0.88	28.13±0.83	0.600	2.806	0.014
	Statistic test	-0.196[a]	18.228[b]			
	P value	0.846	0.001			

P values are significant at level of ≤0.05; a: Independent t test; b: Analysis of Covariance (ANCOVA)

4. Discussion

This study aimed to investigate the effectiveness of acceptance and commitment therapy on anxiety, depression, and stress of women with frequent miscarriages. Results showed that scores of anxiety, depression, and stress were reduced in post–test stage in experiment group. The results of the analysis of covariance showed that these changes were significant. These results are consistent with other studies in this scope (23-25, 27). It can be said that in acceptance and commitment therapy, six core principles were used to develop psychological flexibility (34). This treatment tried to increase person's mental acceptance about mental experiences about thought and emotions. Moreover, in this method, any action is ineffective to avoid or control useless and unwanted mental experiences.

In addition, it increases individual's mental conciseness in the moment. They learned by using cognitive separation that they can be independent of these experiences. Any effort to decrease excessive focus on visual self-imagination or personal stories as being victimized. Furthermore, the subjects were leaded to know their own main personal values and turn them into specific action purposes (clarifying values). Finally, they created a motive for committed action; that is, purposeful value that is oriented to an action by accepting mental experiences. These mental experiences can be depressive thoughts, obsession, specific thoughts , and social fears35) .).

Most of acceptance and commitment therapy are metaphorical. For integrating these processes, metaphors and exercises are used to focus on psychological flexibility (21). Psychological flexibility enables an individual to take appropriate action and deal with bothersome symptoms. A central tenet of acceptance and commitment therapy is that severe psychological discomfort is a natural aspect of the human experience (36). In this therapy method, people learn to acknowledge their anxiety as a natural sensation. Moreover, it pays attention to values that are taught to the patients while teaching the skills. These can have positive effect and commitment to act based on personal values. This process can reduce anxiety, replaces positive thoughts and relieves muscle tension. Monteiro emphasized on the important role of acceptance-oriented approaches to show the women to accept negative events more. Therefore, they will become immune from negative psychology, (23) which is consistent with the results of the current study. Also, Tunnell and colleagues showed women who are hospitalized for risky pregnancies are exposed to more distress and symptoms of anxiety and depression. Therefore, a treatment which is based on acceptance is suitable for these types of women because it cheers them to experience these unpleasant thoughts and emotions (37).

4.1. Limitations

The limitations of this study included not being able to perform follow-up tests. Therefore, it is suggested that follow-up to evaluate the persistence

of therapy effects be considered in the future studies.

5. Conclusions

In general, it can be concluded that utilizing acceptance and commitment therapy can target emotions that play an important role in our behaviors. Moreover, fusion and experiential avoidance can lead to the reduction of many psychological problems. The six cores of psychological flexibility in acceptance and commitment therapy help patients accept themselves in psychological problems and challenges with them, rather than a futile struggle and accuracy of harmful, damaging, and ineffective actions. They will be able to differentiate between their own-self and thoughts. Thoroughly they move toward doing effective actions for a meaningful and valuable life. In other words, negative feelings such as anxiety, sadness, and stress may be reduced by applying acceptance and commitment therapy and its underlying processes such as accepting, greater awareness, being in the present, watching without judgment, and refraining from avoidance.

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Ethical Approval

The Ethics Review Board of Sistan and Baluchestan University, Iran approved the present study with the code of IR.USB.REC.1400.126. Also, written informed consent was obtained from the participants.

Conflict of Interest: None declared.

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