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The Effectiveness of Acceptance and Commitment Therapy on Emotion Regulation and Dysfunctional Attitudes of Female Students with Premenstrual Syndrome

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ABSTRACT

Background: The current study aimed to determine the effectiveness of acceptance and commitment therapy (ACT) on emotion regulation in two subscales of emotion suppression and cognitive reappraisal and dysfunctional attitudes of female students with PMS.

Methods: The statistical population of this quasi-experimental research with nonequivalent control group and pretest-posttest design with a 2-month follow-up included female students with PMS at the Islamic Azad University, Doroud branch in the academic year 2022-2023. The sample size included 30 PMS students who met the inclusion criteria for the study and were selected through an available sampling method and randomly assigned in two experimental and control groups. The experimental group received acceptance and commitment therapy during eight weeks and a two-hour group session every week. The obtained data were analyzed using the statistical test of mixed ANCOVA, SPSS version 22 statistical software.

Results: The mean scores of ACT group in the variable of emotion suppression and cognitive reappraisal have been increased and in the variable of dysfunctional attitude has been decreased after the therapy in the post-test and follow-up. It shows that the therapy has been significantly effective on the women with PMS in the two variables of emotion regulation and dysfunctional attitudes.

Conclusion: The acceptance and commitment therapy has caused the emotional suppression and reappraisal variables which are two subscales of emotion regulation to be increased and dysfunctional attitudes to be decreased in the post-test and follow-up stages. It means that ACT has been effective for women with PMS to reduce some of their symptoms, and it can be used in the clinics to help them.

Key words: Acceptance and commitment therapy, emotion regulation, dysfunctional attitudes, premenstrual syndrome

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Introduction

Premenstrual Syndrome (PMS) is a common disorder in women of reproductive age occurring during the luteal phase of the menstrual cycle and often resolving by the end of menstruation and is characterized by at least one moderate to severe physical, affective, or behavioral symptom that interferes with daily personal and occupational activities and quality of life during two menstrual cycles of prospective recording. The most common psychological symptoms are mood swings, depression, anxiety, anger, and irritability. PMS has recently raised great interest in the research community for its considerable global prevalence [1, 2]

Some studies have related PMS and psychological and personality factors, such as psychological stress and coping styles [3,4]. The studies show that women who suffer from premenstrual syndrome have persistent abnormalities in emotional state and reactivity to stress that are independent of the menstrual cycle, and they experience emotional disorders and difficulty in emotional regulation during the menstrual cycle [5,6]. Emotion regulation refers to a set of processes through which people seek to monitor, evaluate and redirect the automatic flow of emotions in accordance with their needs and goals [7]. Emotion regulation consists of emotion suppression and cognitive reappraisal. Moreover, studies show that women with premenstrual syndrome face their own social psychological problems, and dysfunctional attitudes are one of these psychological factors [8]. Dysfunctional attitudes are attitudes and beliefs that make a person prone to depression or, in general, to psychological and emotional turmoil [9]. These beliefs, which are acquired as a result of experience about oneself and the world, prepare a person to interpret certain situations as too negative and ineffective [10]. The dysfunctional attitudes are the basis for the negative automatic thoughts of depressed person towards themselves, the outside world, and the future [11]. In another definition, it is stated that dysfunctional attitudes are inconsistent cognitive schemas about oneself and the outside world, which as a background factor have an effective role in determining abnormal behaviors and cause the cognitive and emotional processing of people be affected and their individual and social performance decrease [12]. As aforementioned, premenstrual syndrome can affect the psychological and physical characteristics of people involved with it. Therefore, any factor or intervention that can affect the above variables and improve them, will create better conditions for the psychological condition of affected people and lead them to deal more appropriately with this syndrome and improve their problems in the period before and during menstruation. Studies show one of the effective interventions to reduce the symptoms of premenstrual syndrome is Acceptance and Commitment Therapy [13]. The goal of acceptance and commitment therapy, which was formed from the development of cognitive-behavioral therapy [14] is psychological flexibility, which enables the individual to maintain functional behaviors and to change dysfunctional ones, in order to live in accordance with chosen life values regardless of inner experiences [15]. Acceptance and Commitment Therapy (ACT) is grounded in functional contextualism and relational framework theory (RFT) and composed of six interrelated and connected core processes: acceptance, cognitive diffusion, contact with the present moment, self as context, values, committed action. ACT encourages individuals to consciously be open to and accept all psychological events, regardless of how negative and irrational they are, and persist or change their behaviors to fulfill their own values-consistent goals [16, 17]. Although some studies have investigated the effect of acceptance and commitment therapy on PMS symptoms, there are very few or no study to research on the effectiveness of this therapy on emotion regulation and dysfunctional attitudes in the women with PMS. Hence, the present study aimed to find if the acceptance and commitment therapy can be effective in increasing emotion regulation and decreasing dysfunctional attitudes of the women with PMS.

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Methods

The current study was quasi-experimental research with nonequivalent control group and pretest-posttest design with a 2-month follow-up. The statistical population of this study included female students with premenstrual syndrome at the Islamic Azad University, Doroud branch in the academic year 2022-2023, by using the available sampling method, thirty of them who scored 28 and above in the premenstrual screening questionnaire of Steiner et al. [18], were randomly placed in an experimental group of acceptance and commitment therapy and a control group (15 people in each group). The inclusion criteria were completion of a written consent form, identification of the participant's syndrome based on the screening questionnaire, and getting no other physical or psychological treatment for menstrual problems before the research, and the exclusion criteria included the use of psychiatric and psychoactive drugs and absence of more than two sessions in treatment sessions. After obtaining the code of ethics from the ethics committee in the university, and IRCT code, the experimental group received acceptance and commitment therapy during eight weeks and a two-hour group session every week based on Hayes et al (2016), but the control group did not receive any treatment and remained on the waiting list. After the completion of the treatment sessions, the post-test was performed in the two groups under the same conditions. Also, after 60 days, the follow-up phase was conducted and the participants answered the questions of the questionnaires again as a follow-up phase.

The study data were collected through using the following questionnaires: The Premenstrual Screening Questionnaire of Steiner et al (PSST), Emotion Regulation Questionnaire (ERQ) Gross & John (ERQ,2003), and The Beck and Weissmann Dysfunctional Attitude Scale (DAS, 1978).

PSST is a self-evaluation instrument for a retrospective assessment persisting for 2 weeks before menstruation in the preceding 12 months. The participants evaluate each symptom and the level of functional impairment (if present) on a 4-point Likert scale as “not at all”, “mild”, “moderate”, and “severe” [19]. The cutoff point in this questionnaire is 28. The validity and reliability of this questionnaire have been tested and confirmed [20, 21]. The Iranian version of this tool has been used in this study [22]. In the present study, the reliability of the above instrument was obtained by calculating Cronbach's alpha coefficient of 0.83, which indicates the appropriate reliability of it.

The ERQ is a 10-item self-report measure of two common regulation strategies defined within this model: cognitive reappraisal (six items, e.g., “When I want to feel less negative emotions, I change the way I’m thinking about the situation”), which is a cognitive appraisal strategy, and expressive suppression (four items, e.g., “I control my emotions by not expressing them”), which is a response modulation strategy. Items are answered on a 7-point Likert scale with higher scores indicating greater habitual usage of that strategy. The validity and reliability of this questionnaire have been tested and confirmed [23]. The reliability of ERQ was obtained by calculating Cronbach's alpha coefficient, with a coefficient of 0.79 for cognitive reappraisal and a coefficient of 0.84 for suppression, indicating appropriate reliability of this instrument.

The DAS is a self-report scale designed to measure the presence and intensity of dysfunctional attitudes. The DAS-26 consists of 26 items and each item consists of a statement and a 7-point Likert scale (7 = fully agree; 1 = fully disagree). The total score is the sum of the 26-items with a range of 40–182. The higher the score, the more dysfunctional attitudes an individual possesses [24]. Internal consistency, test-retest reliability, and average item-total correlations of the DAS were satisfactory in different samples [25,26]. The Iranian version of this questionnaire translated by Ebrahimi et al. has been used in this study [27]. The reliability of this instrument was obtained by calculating Cronbach's alpha coefficient of 0.90 in the present study which indicates its appropriate reliability.

After collecting the pre-test, post-test and follow-up data, the collected data was analyzed with the statistical test of mixed ANCOVA and using statistical software of SPSS version 22.

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Results

In this section, the variables have been investigated descriptively and inferentially, and the data has first been described and then their analysis has been presented.

Table 1. Descriptive statistics of the studied variables

variable	stage	group	mean	Standard deviation	lowest	highest
Emotion suppression	Pre-test	Act therapy	10.93	3.03	5	15
		control	14.26	2.54	10	19
	Post-test	Act therapy	15.46	3.22	9	20
		control	14.93	2.12	10	18
	Follow-up	Act therapy	17	2.32	12	20
		control	15.06	2.63	8	18
Cognitive reappraisal	Pre-test	Act therapy	24.13	3.44	17	28
		control	20.73	2.22	17	25
	Post-test	Act therapy	26.33	2.84	20	31
		control	20.53	1.81	17	24
	Follow-up	Act therapy	25.73	1.94	22	30
		control	20.04	2.19	17	26
Dysfunctional attitudes	Pre-test	Act therapy	115.46	7.18	100	124
		control	118.80	6.37	102	129
	Post-test	Act therapy	85.46	7.81	72	98
		control	116.4	6.95	104	128
	Follow-up	Act therapy	85.86	7.87	74	99
		control	113.60	6.95	100	123

In Table 1, the mean, standard deviation, and the lowest and highest scores in the variables of emotional suppression, reappraisal, and dysfunctional attitudes are displayed. The mean score of ACT group in the variable of emotion suppression has been 10.93, but it has become 15.46 after therapy and 17 in follow-up. Also, the mean score of Act group in the variable of cognitive reappraisal was 24.13 before therapy in pre-test and it has been increased to 26.33 in post-test and 25.73 in the follow-up. The mean score of ACT group in the variable of dysfunctional attitude was 115.46, which decreased to 85.46 in the post-test and 85.86 in the follow-up. It shows that ACT has been effective for the women with PMS. But in the control group, the mean score of the variable of emotional suppression has been 14.26 and it has been 14.93 in the post-test and 15.06 in the follow-up, in the variable of cognitive reappraisal, the mean score of control group in the pre-test was 20.73 and post-test 20.53 and follow-up 20.04. Moreover, in the variable of dysfunctional attitude, the mean score was 118.80 in pre-test and 116.4 in the post-test and 113.60 in the follow-up. Therefore, t can be seen that the acceptance and commitment therapy has caused the emotional suppression and reappraisal variables which are two subscales of emotion regulation to be increased in the post-test and follow-up stages; it can also be seen that the acceptance and commitment therapy has decreased dysfunctional attitudes in the post-test and follow-up stages, too.

The following results were obtained by using the ANCOVA mixed test and following the presuppositions of this test.

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Table 2. Results of mixed ANCOVA test on the variables of emotion suppression, cognitive reappraisal, and dysfunctional attitudes

variable	source	Degrees of freedom	Mean square	F	P	Eta
Emotion suppression	stages	1	6.94	*4.94	0.043	0.143
	stages*pre-test	1	4.01	2.59	0.119	0.088
	group*stages	1	1.02	1.02	0.320	0.037
	error	27	1.54			
	group	1	135.82	*29	0.001	0.518
	error	27	4.68			
Cognitive reappraisal	stages	1	9.27	*4.46	0.044	0.142
	Pre-test*stages	1	10.54	*5.07	0.033	0.158
	group*stages	1	0.835	0.402	0.53	0.015
	error	27	2.07			
	group	1	168.75	*44	0.001	0.62
	error	27	3.83			
Dysfunctional attitudes	stages	1	0.001	0.001	0.991	0
	Pre-test*stages	1	0.089	0.007	0.932	0
	group*stages	1	35.19	2.94	0.098	0.098
	error	27	11.96			
	group	1	10591.2	*150.47	0.001	0.848
	error	27	70.38		*p≤0.05	

The results of data analysis show that by controlling the effect of the pre-test, the effect of the intervention of acceptance and commitment has been significant in the two variables in the post-test and follow-up. In other words, it significantly causes the variables of emotion suppression and cognitive reappraisal to be increased, and the variable of dysfunctional attitudes to be decreased, and the changes have been stable until two months after the therapy.

Discussion

This study aimed to determine the effectiveness of acceptance and commitment therapy on emotion regulation in two subscales of emotion suppression and cognitive reappraisal and dysfunctional attitudes of female students with premenstrual syndrome. Some studies investigated the effectiveness of acceptance and commitment therapy on emotion regulation and their results showed that this treatment have had effect on cognitive emotion strategies and made them better significantly [28, 29, 30]. Other studies containing the study of Ghalian Nowzari et al (2018) show the effectiveness of this therapy on dysfunctional attitudes [31]. Moreover, the study of Jung et al (2017) showed the effectiveness of acceptance and commitment therapy on the symptoms of women with PMS [32].

The findings of this study is, also, in line with some other studies including Araghchi et al (2019) who studied the effect of ACT on weight loss and emotional regulation in obese individuals (33) and Boostani et al (2017) who studied the effectiveness of ACT on the difficulty in emotional regulation in patients with essential hypertension (34) and Khanjani et al (2021) who has done a randomized controlled trial on the effect of ACT on psychological flexibility and emotional regulation in patients with spinal cord injuries (35).

According to the findings of the current study, it could be stated that ACT through techniques such as discovering intrinsic values and committing to practice based on those values could improve the dysfunctional attitudes of the women with PMS. ACT seeks to achieve psychological flexibility by using the skills of mindfulness, acceptance and cognitive dissonance. The main goals of this treatment are to live a meaningful life, live according to one's values, focus on the present and increase tolerance for negative emotions [36]. The two important processes of acceptance and commitment therapy, that is, contact with the present and self as a context, which are formed

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during this therapy, increase people's awareness of their emotions [37]. During acceptance and commitment therapy sessions, women with premenstrual syndrome were taught to accept their disturbing thoughts and feelings and to experience them only as thoughts, and by substituting themselves as the context, they were able to release unpleasant internal emotions in experiencing the present moment easily and be able to separate themselves from unpleasant emotions and thoughts. The women's cognitive reappraisal and emotion suppression, which means pacification and reducing of negative emotions, increased because acceptance and commitment therapy, by emphasizing facing temptation and any undesirable emotion and being aware of its existence, and by emphasizing accepting them without judgment, instead of avoiding them, helped reduce maladaptive behaviors in women with premenstrual syndrome in regulating their emotions [38]. In addition, it can be said that by implementing the fundamental process of ACT and doing exercises and metaphors related to this therapy, the decentralizing of women with PMS from negative thoughts and feelings with mindfulness and acceptance and the experience of thoughts (pleasant and unpleasant) as they are and making values clear, happened, and it helped the participants to reduce their dysfunctional attitudes. Therefore, in the treatment sessions, these women were taught that any action to avoid or control these unwanted mental experiences is ineffective or has the opposite effect and causes them to intensify them, and these women should fully accept these experiences without any internal or external reaction for eliminating them.

It is recommended that the results of this study be made available to counselors, psychologists, and psychotherapists so that they can use these intervention methods when dealing with women with premenstrual syndrome. It is recommended, also, that, in coordination with university counseling offices, workshops and training courses be held for female students with premenstrual syndrome and their families at the university.

Conclusion

According to the results of the present study, PMS is accompanied with some psychological symptoms including disability in emotion regulation and dysfunctional attitudes. To increase emotion regulation and decrease dysfunctional attitudes in women with PMS, the acceptance and commitment therapy can be effective. Act can help the women with PMS by increasing their psychological flexibility through using six core principles of diffusion, acceptance, contact with the present moment, the observing self, values, and committed action. Most of the studies on PMS in Iran and foreign countries have been done on the overall symptoms such as anxiety and depression, so the results of the present study are useful for developing knowledge about the other psychological symptoms in these women and helping them to be reduced. The limitations of this study included the small number of subjects and the limited sample size of students of Islamic Azad University, Dorud Branch, for the generalizability of the data. Some other limitations were students' family and social issues, their motivation for participating in the study and their cooperation in the process of therapy. As the current study has been done on the female students with PMS in Islamic Azad University, Doroud Branch, it can be replicated using nonstudent women from other geographical places in Iran.

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Conflict of interest

The authors declared no conflict of interest.

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Ethical considerations

Ethics Committee approval was obtained (Ethical Code: IR.IAU.B.REC.1401.009).

Code of ethics

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Authors contributions

All authors equally contributed to preparing this article.

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