IPA
International Journal of Psychology
Vol. 10, No. 2, Summer & Fall 2016
PP. 1-16

Iranian **P**sychological
Association

The Effectiveness of the Cognitive Emotion Regulation Group Training on Mental Health of Adolescent Girls with Symptoms of Premenstrual Syndrome

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This study was conducted to examine the effectiveness of the cognitive emotion regulation group training on mental health of adolescent girls with symptoms of premenstrual syndrome in Kerman, Iran. (The research method was a Two-Group Experimental Design with pretest-posttest). In order to examine premenstrual symptoms we used the PMS Questionnaire and for assessing mental health Goldberg's mental health Questionnaire (GHQ-28) was used. The statistical population of the research was120 adolescents girl, aged 13 to 18 years, with premenstrual syndrome inone of Kerman city's High Schools (District one) in the 2013-2014 academic year. First,120 girls with premenstrual syndrome were assessed based on secondary screening by mental healthand then 78 adolescent girls having lower scores on the Mental health Questionnaire were selected and placed in two 39-person experimental and control groups by the random sampling

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method. Cognitive emotionregulation group training was conducted on the experimental group during 8 sessions. Then the subjects were administered the post-test, a month later. Statistical analysis was conducted by multivariate analysis of covariance (MANCOVA). Thegroup training showed meaningful difference in general health between the two groups. So, cognitive emotion regulation group training can increase mental health in adolescent girls with PMS.

Keywords: cognitive emotion regulation, premenstrual syndrome, mental health

Menstrual symptoms are a broad collection of affective and somatic concerns that occur around the time of menses. Some women manage their monthly periods easily with few or no concerns while other women experience a number of physical and/or emotional symptoms that may be more problematic. This collection of symptoms is referred to as Premenstrual Syndrome (PMS)(Rapkin & Mikacich, 2013).

The American College of Obstetrics and Gynecology defines PMS as affective and somatic symptoms occurring in the five days prior to menstruation and resolving within four days after menstruation. The affective symptoms include depression, angry outbursts, irritability, anxiety, confusion, and social withdrawal; somatic complaints include breast tenderness, abdominal bloating, headache, and swelling of extremities. Mood swings are the major psychological problems of premenstrual syndrome that can seriously interfere with normal functioning and relationships. The disorder is highly prevalent among adolescent girls and has been identified as the leading cause of school and work absences among adolescents and young adults (Forrester-Knauss, Stutz, Weiss, & Tschudin, 2011; Lustyk & Gerrish, 2010; Morse, Dennerstein, Farrell, & Varnavides, 1991; Sigmon & Schartel, 2008).

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The disorder is highly prevalent among adolescent girls and has been identified as the leading cause of school and work absences among adolescents and young adults (Cleckner-Smith, Christine, Doughty, & Janet, 1998; Rapkin & Mikacich, 2013). Related studies in Iran show that about 60% of adolescent girls suffer from PMS (Taghizadeh, Shirmohammadi, Arbabi, & Mehran, 2008).

According to numerous epidemiological studies, a significant proportion of adolescents who suffer from PMS also suffer from other comorbid disorders, especially from depressive, anxiety, social withdrawal and interpersonal conflicts. Studies conducted on depressive and anxiety disorders view PMS as a kind of disorder with noticeable psychological aspect that can negatively affect the quality of life, satisfactionand mental health (Borenstein et al., 2003; Rapkin & Winer, 2009).

The high prevalence of premenstrual symptoms among adolescents can complicate the process of puberty and affect interpersonal relationships, social and educational performance in a negative way, resulting in poor self-esteem, a sense of dissatisfaction, and inadequacy. It is argued that adolescent girls with severe PMS might experience more stress. Generally, PMS is not life threatening but it can seriously alter the quality of life of many adolescents and affect their productivity and mental health. The number of adolescents seeking treatment for premenstrual symptoms is on the rise (Borenstein et al., 2003; Dennerstein, Lehert, Bäckström, & Heinemann, 2010; Lustyk & Gerrish, 2010; Rapkin & Mikacich, 2013; Sigmon & Schartel, 2008).

According to these negative effects, the first step is prevention and promotion of body and mind health in these patients. Therefore, developing some efficient and intervention programs for this particular group of adolescents is of great

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importance (Felver-Gant & Levi, 2011; Garnefski et al., 2007; Rodebaugh & Heimberg, 2008; Rudolph et al., 2007).

Efforts to decrease somatic and psychological complications using effective methods are necessary. There are many methods to reduce emotional and affective problems and there are also appropriate intervention strategies to improve mental health. Research shows that one of the treatment methods is cognitive emotion regulation treatment. It includes learning how to express emotion regulation correctly and cognitively and it can be effective in reducing vulnerability to negative emotions and dysfunctional beliefs, increasing the occurrence of positive emotions and improving mental health. (Kleinstäuber, Witthöft, & Hiller, 2012; Lustyk, Gerrish, Shaver, & Keys, 2009; Morse, Bernard, & Dennerstein, 1989; Morse et al., 1991).

Cognitive emotion regulation refers to all styles of cognitionthat a person utilizes to maintain, alter or increase experience and express emotions in order to raise self emotional compatibility. Cognitive emotionregulation skills have been widely shown in clinical research to be an effective way to alter the nature of emotional responses. Also, like cognitive behavioral therapy (CBT), cognitive emotion regulation relies on the tightly coupled relationship between thoughts and emotions and promotes the correction of irrational or distorted cognitive appraisals to engender more adaptive emotional responses. Learning cognitive emotion regulation skills will help people learn to effectively manage and change their emotions and cope with stressful situations and emotional distress. (Azizi, Borjali, & Golzari, 2010; Berking, Ebert, Cuijpers & Hofmann, 2013; Garnefski et al., 2007; Rudolph et al., 2007).

Despite the lack of research, there is some evidence to suggest that cognitive emotion regulation group training may be effective in improving behavioral and psychological symptoms.

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Therefore, the aim of the present study was to examine of the effectiveness of cognitive emotion regulationgroup training on mental health adolescent*girls*with symptoms of premenstrual syndrome in Kerman, Iran.

Method

According to the study objective, this was a two-group Experimental Design with pretest-posttest. The statistical population of research was 120 adolescent girls, aged 13 to 18 years, with premenstrual syndrome inone of the Kerman High Schools (District one) in the 2013-2014 academic year.First, the PMS Screening Questionnaire was used to study the symptoms of premenstrual syndrome. In order to determine the severity and number of premenstrual symptoms of adolescents, according to the criteria of the American College of Obstetricians and Gynecologists (ACOG), those who had at least 2 symptoms of the symptoms listed in the PMS Screening Questionnaire during 3 months of the cycle (including at least one emotional and one physical symptom) with moderate with PMS. Then, 120 girls with premenstrual syndrome were assessed based on secondary screening by mental health. The 78 girls were allocated to two matched groups based on their pre-test scores. The sample comprised 78 girls with low mental health.

So, 78 adolescent girls having lower scores on Mental Health Questionnaire were selected and placed in two 39-person experimental and control groups by the random sampling method. Only the experimental group participated in the cognitive emotion regulation group training. The group training ran for 8 sessions over 30 days. Inthe end, both groups were administered the post-test (mental health), a month later. It must be noted thatonly one participant dropped out during the

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workshop. Therefore, the post-test was administered to 77 participants, 38 in the experimental group and 39 in the control group. Statistical analysis was conducted by multivariate analysis of covariance (MANCOVA).

Group training objectives summary: The cognitive emotion regulation group training to decrease labile affect.

It includes learning to identify, label and describe emotions using mindfulness on emotional experience, reducing vulner ability to negative emotions, increasing the occurrence of positive emotions, and acting in an opposite manner to motivational tendencies associated with negative emotions.It also helps identify and modify dysfunctional beliefs, and replace them with more adaptive, functional beliefs.This intervention helps the patient recognize her distorted thinking patterns and incompetent behavior. It also helps her replace them with more adaptive, functional beliefs.

Instruments

Premenstrual Syndrome Symptoms (PMS) Questionnaire. The questionnaire contains 21 self-report questions that evaluate the frequency and severity of PMS symptoms. 10 questions are related to psychological symptoms, 10 questions to physical symptoms, and one question is related to the effects of symptoms on the adjustment of the person. Each question contains five options (none (option 1) to severe (option 5). In order to determine the severity and number of premenstrual symptoms of adolescents, according to the criteria of the American College of Obstetricians and Gynecologists (ACOG), those who had at least 2 symptoms of the symptoms listed in the PMS Screening Questionnaire during 3 months of the cycle (including at least an emotional and a physical symptom) with moderate diagnosed with PMS.

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This test was standardized by Bakhshani et al. and its validity was examined through content validity and its reliability was reviewed through the test-retest method and it is recognized as a validated questionnaire. It must be said that this questionnaire is highly stable and valid, making it a well-validated questionnaire (Bakhshani, Mousavi, & Khodabandeh, 2009).

In this study, the retest method was employed to examine the reliability of the questionnaire, for which the PMS questionnaire was administered to a group of students (90 participant) two times with a 10-day interval and there liability coefficient was equal to 83%. Also, using Cronbach's alpha in the present study, the reliability of the total score was calculated as .92.

*Goldberg's Mental Health Questionnaire (GHQ-28).*This questionnaire is used to measure mental health. It was developed by Goldberg and is widely used to diagnose mild mental disorders (Azizi, Borjali, & Golzari, 2010; Goldberg & Hillier, 1979). In each item, options A to D arescored zero to three. As a result, every individualcan score between zero and 84. The questionnairecut-off score is 23, i.e. those with scores lower than 23 have a high mental health and those with scores of 23 higher have low mental health. Research also indicates the validity and stability of the questionnaire.

Numerous studies have investigated the reliability and validity of the GHQ-28 in various clinical populations. The test-retest reliability has been reported to be high (.78 to .90) and Inter-rater and intrarater reliability both have been shown to be excellent (Cronbach's α .9– .95) (Azizi, Borjali, & Golzari, 2010; Goldberg & Hillier, 1979). Also, Cronbach's alpha for the Mental Health **index** and it`s dimensions ranged .80 to .85.

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Results

Mental Health and Treatment Outcome

Table 1 shows the mean and standard deviation of the mental health score and its subscales in experimental and control groups.

Table1

The Descriptive Findings of the Mental Health Score and its Subscales in Experimental and Control Groups

Variables	Stage	Group			
		Experimental		Control	
		M	SD	M	SD
Mental Health	Pre test	45.75	5.93	46.66	5.59
	Post test	22.37	4.96	42.56	6.05
Physical Symptoms	Pre test	10.08	1.71	10.39	1.72
	Post test	5.39	1.49	9.70	1.70
Anxiety and Sleep Disorders	Pre test	12.81	2.13	13.18	1.80
	Post test	5.27	1.85	11.75	2.02
Social Dysfunction	Pre test	9.81	2.14	10.06	2.10
	Post test	6.04	2.31	9.54	2.01
Depression	Pre test	12.72	2.31	13.02	2.16
	Post test	5.68	1.72	11.52	2.31

Table 1 shows the descriptive results of the scores mental health and its subscales inthe pre-test and post-test in each group (experimental and control groups). It is clear that in the mean of pre-test and post-test scores a significant difference was observed.

To assess the effect of cognitive emotion regulation group training on mental health, a multivariate analysis of covariance (MANCOVA) is used.

Before performing MANCOVA, homogeneity of variance assumption is tested and results showed that the Leven test in none of the subscales is significant. Therefore, MANCOVA is applicable. The results of this test are presented in Table 2.

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Table 2
Results for Covariance Analysis on Control and Experimental Groups

Variabes	Source	Sum of Squares	df	Mean Square	F	*p*
Mental Health	Pre test	616.31	1	616.31	25.30	*.001
	groups	9330.03	1	9330.03	383.13	*.001
	error	2264.75	93	24.35	-	-
Physical Symptoms	Pre test	39.74	1	39.74	18.33	*.001
	groups	418.64	1	418.64	193.07	*.001
	error	201.64	93	2.16	-	-
Anxiety and Sleep Disorders	Pre test	25.49	1	25.49	7.20	*.009
	groups	968.07	1	968.07	273.66	*0.001
	error	328.98	93	3.53	-	-
Social Dysfunction	Pre test	82.22	1	82.22	33.59	*.001
	groups	274.825	1	274.825	112.295	*.001
	error	227.604	93	2.447	-	-
Depression	Pre test	67.376	1	67.376	19.285	*.001
	groups	782.735	1	782.735	224.041	*.001
	error	324.915	93	3.494	-	-

*p< .01

Table 2 shows the results of the analysis of the MANCOVA multi-variable covariance. Results of the analysis of the covariance showed that by adjusting the effect of pre-test scores, the differences between the mean post test scores of mental health and its subscales in the control and experimental groups were statistically significant (P< .01).

Therefore,as outlined in Table 2, the results of comparing mental health and its subscales in the post-test showthat after their participating in cognitive emotion regulation group training, mental healthand its subscales of members of the

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experimental group compared to those of the control one has a significant increase (P< .01). Therefore, the cognitive emotion regulation group training has been effective on the mental health of adolescents with symptoms of premenstrual syndrome (P≤ .01).

Discussion

Adolescents with symptoms of premenstrual syndrome suffering from symptoms such as irritability, anxiety, unstable mood, severe depression, social withdrawal and interpersonal conflicts have problems that tend to gradually grow and they feel that they have no control or responsibility for their behavior (Felver-Gant & Levi, 2011; Garnefski et al., 2007; Rodebaugh & Heimberg, 2008; Rudolph et al., 2007).

Therefore, because of these negative effects, efforts to decrease somatic and psychological complications using effective methods are necessary. There are many methods to reduce emotional and affective problems and there are appropriate intervention strategies to improve mental health. Research shows that one of the treatment methods is cognitive emotion regulation treatment. According to the comorbidity of psychological problems of PMS, cognitive emotion regulation training can be an educational intervention for reducing the severity of these problems.

This study was conducted to examine the effectiveness of cognitive emotion regulation group training on the mental health of adolescent girls with symptoms of premenstrual syndrome in Kerman, Iran. As outlined in Table 2, results of comparing the scores of mental health and its subscales inpost-test show that the scores of mental health and its subscalesin post-tests in the two groups have significant difference. (P< .01).

Also, Table 1 shows descriptive results of mental health scores and its subscales inthe pre-test and post-test in each group

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(experimental and control groups). It is clear that in the mean of the pre-test and post-test scores, a significant difference was observed. The research results showed that cognitive emotion regulation training is effective on mental health ($P \leq .01$).

A number of studies that are related to this research will be mentioned. Among these studies, Berking et al. (Berking et al., 2013) showed that integrating strategies that target emotion regulation skills improve the efficacy of CBT for Major Depressive Disorder. Likewise, Berking et al. (Berking et al., 2008) showed that incorporating interventions that directly target general emotion-regulation skills can improve the effectiveness of psychotherapeutic interventions. Ehret et al. (Ehret, Kowalsky, Rief, Hiller, & Berking, 2014) confirmed that systematically enhancing general emotion regulation skills helps reduce depressive symptoms in individuals meeting criteria for major depressive disorder.

Also, Kathleen (2009) and Hunter et al. (2002), quoting Davoudvandi (2011) show that cognitive-behavioral training is effective in reducing the negative signs of PMS including anxiety, depression and aggression. Generally, this study shows that cognitive emotion regulation group intervention is effective in the improvement of mental health and its various components (reduction of depression, anxiety, stress and adjustment problems and an increase of social function) (Azizi et al., 2010; Berking et al., 2013; Berking et al., 2008; Garnefski et al., 2007).

Implications and Conclusions

In explaining this finding we can say that according to studies cognitive emotion regulation approaches, learning to identify, label and describe emotions, and using mindfulness on emotion experience help the person be better aware of her emotions and

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show more suitable reactions in the different situations. As a result, the ability to regulate emotions effectively is one of the essential components of mental health.

On the other hand, cognitive research has also reported that emotional processes are in communication with other aspects of cognitionin a way that emotional stimuli affect a large range of cognitive operations (Berking, Ebert, Cuijpers, & Hofmann, 2013; Garnefski, Rieffe, Jellesma, Terwogt, & Kraaij, 2007; Rudolph, Flett, & Hewitt, 2007).

In fact, the regulation of emotions and cognition are inextricably associated with human life and they help people manage or regulate emotions or feelings. Obviously, human beings have the ability to apply cognitive procedure to affect emotional response regulation.

In explaining this finding we can say that cognitive emotion regulation training, finding and rebuilding dysfunctional beliefs, and replacing them with more adaptive functional beliefs can lower the level of negative emotions (anxiety and depression).

Then, cognitive emotion regulation training results in the elimination of negative thoughts and brings about positive thoughts, and thus it can reduce mood swings such as depression and anxiety. Also, group training causes collective social contacts and people increase their self-image and confidence, and as a result, stress and anxiety are reduced. Thus, cognitive emotion regulation training is one of the interventions changing mental health scores.

Therefore, cognitive emotion regulation intervention can be used as the treatment of choice and complementary medicine in improving the mental health of adolescents living with PMS.

Since the training was conducted only on adolescent girls, it is not possible to generalize the results to other age groups. Thus, considering the limited age group, other researchers can

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accomplish this study in other cities and within other age groups. Also, F future research should apply repeated cognitive emotion regulation group training to examine its prolonged influence of on the mental health of adolescentgirls with symptoms of premenstrual syndrome.

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Received: 2/3/2014
Revised: 21/7/2015
Accepted: 27/7/2015

[Downloaded from bijp.ir on 2026-11-20]