



RESEARCH PAPER

The Effect of Cognitive Behavioral Therapy on the Symptoms of Premenstrual Dysphoric Disorder of Pakistani Female Adolescents

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ABSTRACT

Premenstrual emotive, cognitive, and bodily symptoms affect many of females in the course of reproductive years, with most indications occurring during the final premenstrual phase and subsiding a few days after menses begins (Pearlstein, Yonkers, Fayyad, & Gillespie, 2005) The aim of the study to see the effectiveness of Cognitive behavioral therapy (CBT) on the symptoms of premenstrual dysphoric disorder (PMDD) of young adolescents. The sample size of N= 16 participants (M=14.90, SD= 0.86) was selected and divided into two groups, an experimental group and control group, having 8 participants in each group. The base line score was taken by using Cuestionario del Trastorno Disfórico Premenstrual – DSM-5 (CTDP –DSM-5) and checklist on experiences related to menstruation (CEM). The experimental group received 7 individual sessions utilizing CBT intervention. The results suggested a significant contribution of CBT in decreasing the symptoms of PMDD. The scores of pre and post testing ($p < 0.05$) of experimental group verified the efficacy of CBT in treating the symptoms of PMDD and increasing the positive attitude and experience related to menstruation. The present study makes important implications regarding the use of the CBT intervention as a complementary strategy in mental health promotion and treatment. And in future researches the role of anxiety and depression should be focused because PMDD leads to the different psychological disorders

Keywords: Adolescents, Cognitive Behavior Therapy (CBT), Premenstrual Dysphoric Disorder (PMDD)

Introduction

The transitional phase of development and growth between childhood and adulthood is called Adolescence. (Csikszentmihalyi, 2019) The age range of adolescent is between 10 to 19 years by the World Health organization (WHO), during adolescent he physical and emotional problems arises (WHO, 2019). Teen years are marked by lots of physical changes in the body when secondary sex characteristics appear, fertility is achieved, brain and sex hormones along with growing independence. This stage is defined as a transitional stage of bodily changes and mental or psychological development that occurs during the period of puberty to legal adulthood. The onset of puberty signals the beginning of adolescence and puberty now occurs earlier on average than in the past. The common age range of onset of puberty is ages 8 to 14 in females and ages 9 to 15 in males, with girls experiencing bodily growth characteristics of the onset of puberty two years before boys. There is growing sign to propose that puberty rather than chronological age may signal the onset of delinquency and problematic behaviors among some teenagers. (Kipke, 1999)

The physical changes are integrated with puberty and timing has a considerable influence on the social and emotional functioning of the adolescent. Most of the individual face this period with behavioral problems because bodily changes make them moody and that lead to aggression etc. When Adolescent growth is wealthy the time off as biologically mature individual with a sense of furnished independent self. (Mendle, Beltz, Carter, & Dorn,

2019). The betterment of a nation depends on girls but in most of the families, girls are going through not as much of health care, diet and education due to many factors. Due to which they face vulnerable physical and psychological lacks and deficiencies to the onset of puberty. Nutritional deprivation increased iron for adolescent growth which causes excessive menstrual problems. Many girls are unaware of their nutritional needs (particularly increasing their nutrition to meet calorie demands of pubertal growth), causing the problem of being underweight and short height. (Mendle, Beltz, Carter, & Dorn, 2019)

Menarche will occur which is when a girl has her first menstrual period. Which is interconnected with hormonal conversions and the attainment of secondary sexual characteristics. From this day the menstrual cycle starts and will continue to cycle until menopause which is when the menstrual cycle stops. the menstrual cycle can vary from 20 to 35 days but will refer to an average 28-day menstrual cycle a new menstrual cycle begins on the first day of menstruation and ovulation occur 14 days before the beginning of a new cycle. Within the span of pubertal development, it is possible to see bodily changes as much as 5 years earlier to menarche. So, for average 28-day menstrual cycle this means that pre-ovulatory and post ovulate re phase both last 14 days. Adolescence process through an extensive range of chronological ages. This is interrelated with (genetic) hereditary and environmental factors. There is rapid spurt in height and weight. One of the research projects shows that stress delays maturation for young adolescents but precipitates puberty for older adolescents. Susman discussed that stress would delay development and maturation because reproductive hormones tend to be suppressed by stress hormones. (Susman, 1997; Graber & Warren, 1992). The periodic hormonal fluctuation connected with the menstrual cycle interrelates with diet in significant ways. Appetite, starvation, satiety, hunger, aversion, cravings all vary with the cycle. In adolescents the interval of menstruation is often quite variable due to the frequency of ovulatory cycles. Menstrual irregularities are usually considered to be common physical phenomena that spontaneously decrease during the first few posts menarcheal years (Merritt, 1994).

In DSM-V the menstrual related problem classified in mood disorder and name it as a Premenstrual Dysphoric Disorder and Before the release of the fifth version of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V; American Psychiatric Association, 2013) premenstrual dysphoric disorder (PMDD) has been classified in DSM-IV-TR as a Mood Disorder Not Otherwise Specified. (American Psychiatric Association, 2000). From the reference of DSM-IV-TR, in the menstrual age 3-5% of women may suffer from the disorder., from those 90.6% of women consider the indications to be common and normal (not pathological) and 18.7% of women tries to search for expert help, although in some circumstances they receive an inadequate reaction (Lete, et al., 2011). However, almost 20 years of exploration, the disorder has now been acknowledged as a distinctive diagnostic entity in the newly printed DSM-5 (American Psychiatric Association, 2013).

Millions of women suffering with PMS this is an overlay that goes to the next level with PMDD premenstrual dysphoric disorder. It is an essence a PMS woman on steroids big time heavy duty premenstrual dysfunction, and it leads to mood disorders depression anxiety it disrupts a home family let alone the individual's life. A woman cycle there are huge issues with breast tenderness mood disorders anxiety and to the point of depression and severe anxiety lower abdominal pain low back pain. The study indicates that ecological stressors disturb the reproductive hormones or do the degree of maturation disturb the level of flowing stress hormones. For example, earlier menarche in girls appears to be associated with family conflict (Graber et al., 1995).

Many women experience many behavioral changes in menstruation week. Whereas it depends on ages that minority of the women suffer severe and debilitating symptoms whereas some women experience mild symptoms. Females who are diagnosed with premenstrual dysphoric disorder (PMDD). All symptoms like bad temper, sad mood,

irritability, stiffness, and labile mood dominate. Bodily symptoms, including breast tenderness and bloating create disturbance in overall functioning of daily life. And for that treatment by SSRIs the antidepressants of the serotonin reuptake inhibitor taken occasionally or during the menstrual cycle. (Cunningham, Yonkers, Brien, & Eriksson, 2009). A group of professionals to study the researches on premenstrual dysphoric disorder and after an extensive discussion, the expert group offered that the data on the diagnosis, treatment, and validation of the disorder has developed sufficiently for it to be qualified as a full category in DSM-V. Thus, the normal menstrual instabilities in somatic and expressive symptoms experienced by the most of women would not be considered problematic and neurotic if premenstrual dysphoric disorder becomes a different classification in the Mood Disorders section of DSM-5. The advantages of comprising premenstrual dysphoric disorder in DSM-5 will be significant, as it will improve not only examination, investigation and clinical care but also the reliability of women who suffer from significant monthly distress. (Epperson, et al., 2012)

Literature Review

According to this study the researcher assessed that 3-8% of reproductive age meet accurate criteria for premenstrual dysphoric disorder (PMDD). And their result shows that that premenstrual dysphoric symptoms severe enough to cause distress, impairment and suffering, though the number of symptoms may not meet the criteria of 5 symptoms on the PMDD list but in that study they focus on the differences between other depressive disorders and PMDD because due to the problem of PMS/PMDD as well as the other daily life disturbances due to this changes it match with criteria of other disorders. According to them recognition of these disorder and its effect should lead to management and treatment of the symptoms of more women with PMS/PMDD. They exhibit that several treatments are available which decrease misery and affect family and society. (Halbreich, Borenstein, Pearlstein, & Kahn, 2003). Menstrual disorder does not only associate with the academic stress but also play a role in causing the major depression in female. Research was conducted to study the relationship between premenstrual syndrome and major depression and how the depression and PMS is varied. The result showed that those women who suffer from a high mental distress showed a substantial risk of major depression and the high risk of Pre-Menstrual syndrome. Also result indicate that women who suffer from both disorders are more impaired than who suffer only from on disorder, so the study showed that Premenstrual syndrome and major depression are different disorder but can sometime co-occur. (Knauss, Stutz, Weiss, & Tschudin, 2011). Various researches concluded menstrual disorder causes many distresses and depression in life, but a study suggested that depression anxiety and smoking influence menstrual cycle and dysmenorrhea in adolescent girls. The result showed that high depressive and anxiety symptoms related to substantial risk of menstrual symptoms. Girl who smokes were related to the high Pre-menstrual symptoms as compared to the girls who never smoke. (Dorn, et al., 2009)

Among all the forms of psychotherapies, cognitive behavioral therapy (CBT) has been most often empirically researched and proven to be successful in resolving several cognitive, behavioral, emotional and other problems. (Pybis, Saxon, Hill, & Barkham , 2017). CBT is more effective for those who suffer from anxiety and depression instead of treating with only medication. Result showed that the interventions of CBT are the briefer and more effective treatment methods for specific anxiety disorders such as panic, social anxiety and even post-traumatic stress. (Ramsay, 1996). Similarly, if the Cognitive behavior therapy is effective for anxiety, depression so much researches also suggested that it is very effective for many other problems of like mood disorders research was conducted in 2016 to check the Effectiveness of Group Cognitive-Behavioral Therapy on Symptoms of Premenstrual Syndrome (PMS). The result showed that there was a significant variance in psychological signs before and after **behavioral therapy-cognitive**. Also, cognitive-behavioral therapy

was **.impactful on social interventions caused by PMS Symptoms**(Maddineshat, Keyvanloo, Lashkardoost, Arki, & Tabatabaieichehr, 2016)

Research was conducted on the premenstrual symptoms in Pakistan's women and their effect on their daily living activities the result showed that 99% women did not aware of the PMS symptoms and the symptoms which was common in women were abdominal bloating, cramps, lack of energy, irritability and mood swings. The effect of PMS severity on activities of daily life was highly significant. (Pal , Dennerstein, & Lehert, 2011). According to the psychiatry model the goal of treatment is reduction in the symptoms, progress in the daily life functioning and remission of disorder. For achieving the goal of the treatment client should play and active role to solve his or her problem by challenging his or her automatic negative thoughts and change problematic behavioral pattern. So, the modern model of CBT suggests the different therapeutic strategies include cognitive, behavioral and emotional strategies and that techniques help to manage the different disorders. (Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2012). That is the focus of the current study.

However, in determining the effectiveness of the self-care measure, many studies have concentrated on the effectiveness of a single intervention for the relief of premenstrual dysphoric disorder. The efficacy of CBT in dealing other distressing mood disorder that share symptoms in common with Premenstrual dysphoric disorder (e.g., anxiety, pain, depressed mood, fluctuation in mood, feeling about self) delivers theoretical reasoning for its use in dealing premenstrual dysphoric disorder. Further theoretical justification for the use of CBT for premenstrual dysphoric disorder come from the beck's theory, A promising intervention aimed at improving emotional regulation and irrational thought is Cognitive behavioral therapy (CBT), developed by beck to treat depression particular anxiety disorders such as panic, social anxiety, and even post-traumatic stress. Most of these symptoms are also associated the premenstrual dysphoric disorder (DSM V) and can be added by what these symptoms means to a woman (her sense of self), if, for example she believes herself to be in some way victimized by her monthly physiological changes but to lack of control over them, then the development of negative mood, increased focus on undesirable events, increased depressed mood, emotional disturbance and increased need for control are likely resultant factor (Rosen, Moghadam, & Endicott, 1990). So, CBT assesses these symptoms attributions while teaching coping strategies. CBT seems like an effective intervention and has been examined in several studies reviewed here. The current research addresses the implication of CBT with patients with PMDD because this problem starts with thought process about bodily changes and lead towards severe problems of mood swings, depression anxiety and hopelessness and CBT altered the psychosocial behavioral and cognitive issue both. Through this intervention the participants feel a decrease in their disturbance of life and self-esteem problems and try to deal with these symptoms efficiently.

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At the early age, the girls are experiencing puberty, if the females are unaware about the puberty, menstruation the negative attitude form related to the menstruation with effect the different domain of life. So, understanding and education about menstruation is particularly important for young girls. The girls who are suffering from the premenstrual dysphoric disorder they form the negative perception about the menstruation that effect the daily activities, relationship and goals and the most important things self-esteem of the individual. So the current study design to give the awareness of the young girls in school which suffer from the symptoms of premenstrual dysphoric disorder give them a concrete information about the PMDD and how to manage it with the help of CBT intervention by this girls are able to conceptualize the relationship between the symptoms of menstruation and its effect on life. If the negative experience and perception continue to pass down to new generation of females it effects the bio, psycho, social domain of life and as well as the generate the sense of shame for body and low self-esteem. (Aflaq & Jami, 2012)

Mensuration is the Menstrual anomalies are generally considered to be normal physical phenomena that naturally subside during the first few post monarchical years. In DSM-V the menstrual related problem classified in mood disorder and name it as a Premenstrual Dysphoric Disorder and Before the publication of the fifth version of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (American Psychiatric Association, 2013). According to the Aperribai, Alonso-Arbiol, Balluerka, & Clae the premenstrual dysphoric disorder divided into two factors. first factor, called Dysphoria, included dysphoric symptoms (anxiety, depression, the symptoms linked to them, and gain in weight) and the second factor, named Apathy, referred to apathetic and physical symptoms, the factor apathy set on C criteria of PMDD. And the factor dysphoria is set on B criteria of PMDD. According to the Aperribai, Alonso-Arbiol, Balluerka, & Clae when the girl /women experience menstruation, she suffers from the two types of the symptom's dysphoria and apathy when the occurrence and severity of these symptoms increases its cause the Premenstrual dysphoric disorder in girl/women. The effectiveness of CBT in managing other expressive and mood disorder that have some symptoms in common with premenstrual dysphoric disorder (e.g., anxiety, pain, depressed mood, fluctuation in mood, and feeling about self) provides theoretical justification for its use in managing premenstrual dysphoric disorder. By using the techniques of CBT (negative triads, vicious cycle, core beliefs), the symptoms of dysphoria and apathy decreases. When the symptoms of dysphoria and apathy decreases then the female can do their life activities in an effective way. In the light of above literate and theoretical framework it was hypothesized that There would be an effect of Cognitive behavioral therapy on the symptoms of premenstrual dysphoric disorder of Pakistani female Adolescents. The second hypothesis was that there would be a difference in effectiveness of CBT between pre-test and post-test results of experimental and control group. Another hypothesis was that, there would be an effect of cognitive behavioral therapy in experimental (intervention) group and waiting list control group.

Mterial and Methods

Research Design

This study is primarily a quantitative study with pretest posttest quasi experimental design.

Participants

Early adolescents' girls were selected (n= 16) using the convenient purposive sampling from Hayatul Islam school the age was in between 13 to 18 years (M= 14.90, SD: 0.86) and was divided into two groups, experimental group and waiting list control group. The inclusion criteria for participants included that they had high score on the Premenstrual Dysphoric Disorder Questionnaire for DSM-5 scale, their age was in between 13 to 18 years, they did not have a chronic mental and physical illness and taking medication and they are Experience regular menstruation cycle for last 1 year.

Measures

Following are the measure that were used in the current study.

Informed consent was used to obtain participant's permission to take part in the research. It contained information about the purpose of research, maintenance of confidentiality, and participant is right to withdraw from the research any time without any consequences. The consent was taken from school principal

A demographic information sheet was required for the participants to fill out information that would help the researcher to know about the sample of the study. The demographic form includes name, age, class, academic grades, academic goals, symptoms of the problem.

Questionario del Trastorno Disfórico Premenstrual - DSM-5 (CTDP -DSM-5) Premenstrual Dysphoric Disorder Questionnaire for DSM-5. Is a retrospective screening scale aimed to measure PMDD according to DSM-5 criteria. This was developed by Aperribai, Alonso-Arbiol, Balluerka, & Clae. It comprises 25 dichotomous items in total Scoring procedure was determined through Yes/No responses. The scale consists of two sub factors the first factor, called Dysphoria, included dysphoric symptoms (anxiety, depression, the symptoms linked to them, and gain in weight) and the second factor, named Apathy, referred to apathetic and physical symptoms, the factor apathy set on C criteria (with the exceptions of items 18, 21 and 25) of PMDD. And the factor dysphoria is set on B criteria of PMDD. Dysphoric factor includes items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 18, 21, 25 and apathy factor includes item 11, 12, 13, 14, 15, 16, 17, 19, 20, 22, 23, 24. The possible score range can fluctuate between 0 to 25. High score on CTDP showed severe problem related to menstruation whereas low score showed no problem related to menstruation. Total time required for the administration of CTDP was 8-10 minutes. About reliability, both factors presented good internal consistency and the convergent validity of the CTDP - DSM-5 was predictable at .53. Both factors, Dysphoria (Ordinal Alpha = .88) and Apathy (Ordinal Alpha =.84), have good internal consistency. (Aperribai, Alonso-Arbiol, Balluerka, & Claes).

Checklist on Experiences Related to Menstruation (CEM) is a self-administered questionnaire intended to measure the experience related to menstruation. This was developed by Aflaq in 2005. It consisted of 20 items in total. The scoring procedure included the two Yes/No responses. Yes scored 1 and the NO resonse scored. The score range between 0 to 20. Some score had a reverse score. The items no include 3,4,5,6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 19, and 20. Item-total correlated from .12 to .48 at p < .05 and .01 levels. Cronbach alpha which was attained on the CEM was .95. High score on CEM indicated

cheerful outlook related to menstruation whereas low score exhibited negative attitude related to menstruation. Total time required for the administration of CEM was 7-8 minutes. (Aflaq, 2005)

Cognitive Behavioral Therapy (CBT) Manual (Naeem & Ayub, 2013) The session plan was adapted from the manual of CBT for depression by Naeem and Ayub (2013). The main techniques which were adapted from the manual were psychoeducation on cognitive triads, identify and change the cognitive errors, downward arrow technique to identify the core belief and assumptions, relaxation techniques, thought diary, if-then Socratic questioning, and cost benefit analysis. These were some major techniques which were used to reduce the symptoms of premenstrual dysphoric disorders it was reported from the literature that cognitions play important role in reducing the symptoms of PMDS

Procedure

The data for the study was collected after getting an official approval from respected authorities of the school. A consent form was given to the participants with clarification of the purpose and procedure of the study. In the first phase of the study the pre-intervention measures, that is demographic information form, Cuestionario del Trastorno Disfórico Premenstrual - DSM-5 (Aperribai, Alonso-Arbiol, Balluerka, & Claes) and Checklist on Experiences Related to Menstruation (Aflaq, 2005) was administered on all the participants in a group session form by the researchers.

After the calculation of the scores the participants will be divided into two equal groups (8 each) that is experimental and the control group. The experimental group will then subject to receive 8 individual sessions utilizing cognitive behavioral therapy techniques focusing on decreasing their symptoms of premenstrual dysphoric disorder while the control group received no treatment at that stage. The therapy session was conducted once a week, and their duration was 45 minutes to one hour.in the third phase of the study a post test was consist of the same variables measures conducted both the groups in the same order. The experimenter conducted both the pre-test and post-test. The result obtained from both the groups were then compared quantitatively by using statistical measures for the social sciences.

An outline for the sessions utilizing Cognitive behavioral therapy techniques for reducing the symptoms of premenstrual dysphoric disorder is provided below in table 1:

Table 1
Session plan

Sessions	Aims and objectives	outcomes
1	Assessment Introduction of PMDD Introduction of CBT	Awareness about the symptoms of PMDD
2	Introduction of therapeutic approach, Review of previous content Review of cognitive error	Identify the cognitive errors. Understanding of Beck's model (vicious cycle)
3	Understanding what are the negative thoughts	Cognitive restructuring
4	To examine the belief of the client in regards to the cognitive quadrant	To identify the roots of belief system
5	Teach the problem-solving skills Teach body scanner exercise and discuss Diet plan	Learning the skills that help her in her daily routine during PMDD
6	Talk about faulty assumptions	Address their difficulties of altering their thoughts

7	Examine the goals that were set initially Set goals for future	Review ways the client changed throughout treatment Termination of therapy
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The above-mentioned table provides a detailed overview of the 7-week sessions plan with respective aims and objective and expected outcomes.

Results and Discussion

This section contain a result through the analysis of the data. The hypotheses were tested using inferential and descriptive statistical analysis and paired sample t-test to the data using SPSS to discover the relation between variables.

Table 2
Descriptive statistics and unilabiate normality of the study variable (N=16)

Variable	No of Item	N	Mean	SD	SK	K	Range	
							Actual	potential
CEM	20	16	8.68	4.84	0.23	-1.28	2-17	0-20
CTDP	25	16	12.37	7.27	-0.28	-1.74	1-24	0-25

CEM= Checklist on Experiences Related to Menstruation, CTDP= Cuestionario del Trastorno Disfórico Premenstrual – DSM-5

Table 2 shows the descriptive statistics of the variables. The mean value of the checklist on experience related to menstruation was 8.86 with standard deviation of 4.48. The value of Skewness was 0.23 which shows that the distribution was normal, and the value of kurtosis was (-1.28). The mean value of the CTDP was 12.37 with standard deviation of 7.27. The value of Skewness was -0.28 which shows that the distribution was normal, and the value of kurtosis was -1.74.

Table 3
Descriptive Statistics and Paired Sample t-test for Symptoms of menstruation cycle before and After Intervention Experimental Group (N=8)

variable	Pretest		Posttest		MD	T	p	r	95% CI	
	M	SD	M	SD					LL	UL
CEM	3.75	2.37	12.87	2.64	-9.12	-6.93	.000	3.707	-12.23	-6.01
CTPD	20.25	1.98	5.75	3.45	14.5	11.98	.000	5.21	11.63	17.36

* $p < .05$

Table 3 demonstrates descriptive statistics and paired samples t- test results for pretest and posttest of experimental group participants. The value of p is less than .05 therefore, the result is statistically significant. The value of Cohen's d ($r=3.70$. 5.21) Shows the large effect size for CEM and Small effect size for CTPD in the experimental group.

Table 4
Independent Sample t-test for Difference in Severity Level of Symptoms of Premenstrual Dysphoric Disorder between Participants of Experimental and Control Groups for the Post test

Variables	Experimental Group		Control Group		T	df	p	g
	M	SD	M	SD				
CTDP	5.75	3.45	19.00	1.06	-10.36	14	*0.002	5.21

* $p < .05$, CTDP= Cuestionario del Trastorno Disfórico Premenstrual – DSM-5

Table 4 shows the independent samples t-test representing the difference between the result of the experimental and control groups for the post test. The value of p is less than .05 therefore, the result is statistically significant. The value of Cohen's d ($r=5.21$) Shows small effect size for CTPD in the experimental group.

Discussion

In the light of past researches, it was hypothesized that, the CBT will influence the symptoms of premenstrual dysphoric disorder. The past researches have provided the evidences for the effectiveness of cognitive behavioral therapy (CBT) with premenstrual dysphoric disorder (PMDD) (M, Gerrish, Shaver , & Keys, 2009) but in Pakistan it is still under the research, so the aim of current was to find the evidence of effectiveness of cognitive behavioral therapy (CBT) to reduce the symptoms of premenstrual dysphoric disorder (PMDD) of Pakistani female adolescents and to investigate the prevalence of the premenstrual dysphoric disorder (PMDD) and to know the experience and attitude related to premenstrual dysphoric disorder (PMDD). The present study used the Aron T Beck's model of CBT for knowing the role of cognition in the symptoms of premenstrual dysphoric disorder (PMDD) and using it to reduce the symptoms of premenstrual dysphoric disorder (PMDD) among the Pakistani females.

Premenstrual dysphoric disorder is often a factor of several physical like cellular disorder and psychological problems, like mood disorders (Gander, 2017). Premenstrual dysphoric disorder is defined as severe irritable mood, depressed mood, and anxiety before the onset on menses and it is more severe than PMS (Petersen, et al., 2016). Most of previous researches concluded that the premenstrual dysphoric disorder effects the quality of life of the females in their reproductive years as affect the life in major depressive disorder. (Epperson et al. 2012; Halbreich et al. 2003; Wittchen et al. 2002). So, in the present study targeted the young female adolescents as in the initial stage experiencing menstruation is especially important which form the attitude either positive or negative related to menstruation which holds extreme impact in young adolescents' girls lives. (Aflaq & Jami, 2012)

The hypothesis anticipated that there will be a difference between the results of pretest and posttest of experimental group and waiting list control group. the paired sample t-test was applied and the analysis showed the significant differences in participant's results of pre and post intervention of experimental group ($t=11.98$, $df=7$, $p<0.05$) hence, the current results of the study providing the confirmation for the hypothesis that there will be a difference between the results of pretest and posttest of experimental group and waiting list control group. This shows that the individuals were experiencing many symptoms of premenstrual dysphoric disorder before the intervention in experimental group (pre: $M=20.25$, $SD=1.98$; post: $M=5.75$, $SD=3.45$). Hence the results validating that cognitive behavioral therapy is effective in reducing the symptoms of premenstrual dysphoric disorder. Table number 10 shows the comparison results of pretest and posttest of waiting list control group, thus these results providing the evidence for the hypothesis that there would be the difference in effectiveness of CBT between pre-test and post-test results of experimental and control group of Pakistani female adolescents.

From the current study it was found out that in the premenstrual dysphoric disorder the females experiences several symptoms like anxiety, depression, mood swing, craving of the food (Reed, et al., 2008) and these symptoms effects the individual's life like poor health conditions, poor quality of life, emotional problems. (Delara, et al., 2012). The study showed that the increase in the symptoms of premenstrual dysphoric disorder at the female's reproductive age, reported the problem in physical, emotional, and social domain of life. In all the domains of life the emotional problems cause the severe effect and most problem of the life because moods effect the daily life of female like Cancellation of commitments which

effect the family and social relationships also effect the academic and professional performance.

From the analysis it was found out that all the participants of the study experiencing the symptoms of depression, anxiety, lack of interest in activities, physical symptoms, loss of appetite, change in the sleep patterns, lack of concentration, mood swings, but theses all symptoms were not observed in the post intervention group that suggest the positive changes occur after the intervention of the CBT. The study suggests that the difference occurs because of the treatment of the study, the time spent in the study or because of the positive attitude towards study and individuals differences. This study also showed that the difference occurs due to the understanding of relationship between thought and feelings and increase the awareness about the symptoms of premenstrual dysphoric disorder that was not giving to the participants of waiting list control group. (Usshe & Perz, 2017)

In the pre intervention phase of the study most of the females reported negative attitudes towards menstruation like, why females experiencing the menstruation cycle, why men does not experience, why this cycle happen at every month, this cycle disturb the daily routine, most of the female reported the irritable mood before the onset of the cycle which disturb their routine, they feel over sensitivity and mood swings which is the main part of the PMDD definition. (Nevatte & etal, 2013) And these all symptoms reported in other previous researches. (Ussher & Perz, 2013) Due to the PMDD it burdens to the individual's social and family life. They reported that they feel difficulty in interacting in the social environment and with family because of the anti-social behavior and lack of energy and fatigue. Students reported that when they must prepare for test or any other examination and to attend important event, but they were unable to prepare themselves for that, so they always blame the symptoms of PMDD. As the PMDD affects the social life of the individual it also affects the psychological health, self-image, self-concept, self-esteem and general wellbeing of the individual. Most of the females in the current study reported that due to the PMDD they are not confident, competent enough to achieve their goals and these self-critical thoughts leads to the other psychological disorders like anxiety and depression. The most key factor which causes the PMDD was the participant's thoughts about menstruation. Initially when asked the participants about menstruation they refused to talk about their problems because in our culture, talk about menstruation is not acceptable. They have a little knowledge about the symptoms of premenstrual disorder. (Hundersmarck, 2017). So, in the intervention phase of the study increased awareness and understanding of premenstrual changes and how to manage these changes and play an active role in their lives. It helps them in increasing communication and help seeking behavior and it also enhances their coping skills through which they can lead a balanced life. (Usshe & Perz, 2017)

The experimental group received the treatment and the results showed that the women who experiencing the symptoms of premenstrual dysphoric disorder feels out of control during the cycle (Ussher & Perz, 2013) and the individual starts evaluating herself critically and negatively, starts evaluating own thoughts and feelings negatively. With the present of premenstrual changes like hormonal changes to emotional changes leading women towards the positions of the "monstrous feminine" (Ussher, 2016). In the current study, the female described the significant weight gain before the onset of the cycle, experience the feelings of unattractiveness, ugly and self-loathing. Previous researches showed that the feelings of unattractiveness or weight gain are associated with the change in the appetite of the female during the cycle like emotional eating. And the perception of self-loathing, weight gain and belatedness or the feelings of fat just because of the condition of premenstruation and starts dislike the premenstrual body. With the intervention of CBT these thoughts about the self and menstruation had been challenged and with the help of CBT increase the understanding of self-acceptance and self-care with these practices most of the female reported engage in the coping strategies to deal with that symptoms and

decrease in the negative concept related to the menstruation. These finding help in increase in the awareness of the symptoms of the premenstrual dysphoric disorder rather than the weight gain and self-care. (Hildebrandt, et al., 2014). With the help of CBT intervention positive changes occur and this suggests a positive attitude towards menstruation after the intervention. In help the female adolescents to accept the premenstrual body, accept the premenstrual self and acceptance of the premenstrual changes. Another participant of the study reported that before that onset of menstruation she starts getting worried about the menses, she stops doing work, she stops focus on her studies, cannot enjoy her leisure time activities, she starts thinking about she would become dirty when she had a menses. She reported that she experienced significant weight gain before the onset of the cycle, experiencing the feelings of unattractiveness, ugly and self-loathing. She avoids going to school and coaching. She thoughts that others were observing her, and they knew that she had a menses. She reported that by understanding the menstrual cycle she admits that the messes are natural process that were expected by every girl, and it is normal, and it does not affect our lives if we can manage it properly. And with the help of thoughts alteration technique of CBT she can be able to manage her routine in a better way.

However, in figuring out the effectiveness of the proposed self-care measure, most studies have focused on the efficacy of a single intervention for the relief of premenstrual dysphoric disorder. The efficacy of CBT in managing other affective mood disorder that share symptoms in common with Premenstrual dysphoric disorder (e.g., anxiety, pain, depressed mood, fluctuation in mood, feeling about self) supplies theoretical justification for its use in managing premenstrual dysphoric disorder. Additional theoretical justification for the use of CBT for premenstrual dysphoric disorder come from the beck's theory, A promising intervention aimed at improving emotional regulation and irrational thought is Cognitive behavioral therapy (CBT), developed by beck to treat depression specific anxiety disorders such as panic, social anxiety, and even post-traumatic stress. Most of these symptoms are also associated the premenstrual dysphoric disorder (DSM V) and can be compounded by what these symptoms means to a woman (her sense of self), if, for example she believes herself to be in some way victimized by her monthly bodily changes but to lack of control over them, then the development of negative mood, increased focus on negative events, increased depressed mood, emotional disturbance and increased need for control are likely resultant factor. So, CBT evaluates these symptoms attributions while teaching coping strategies. CBT seems like a worthy intervention and has been investigated in several studies reviewed here. Precisely it is concluded that the factor of CBT of depression and anxiety and PMDD share some common factor and symptoms, So, CBT evaluates the symptoms attributions while teaching coping strategies. CBT seems like a worthy intervention to cure depression and anxiety as well as the PMDD.

Conclusion

The current study aimed to investigate the effectiveness of cognitive behavioral therapy to reduce the symptoms of premenstrual dysphoric disorder of Pakistani female adolescences in the individual sessions. The result of the study showed statistically significant difference in the result of pretest and posttest of the intervention group or control group. Result also showed the significant difference between the results of the post test of experimental and control group. The current study findings indicate that there was a significant reduction in the symptoms of premenstruation dysphoric disorder in experimental group than the waiting list control group and these findings support the hypotheses of the study. Moreover, it is also verified that the CBT is effective in reducing the symptoms of premenstrual dysphoric disorder of female adolescents and with the help of CBT female can improve their thoughts and feelings, improve their lives. And with the help of coping strategies or problem-solving skills they can manage their premenstrual symptoms in a better way.

Recommendations

In the light of the present study on the effectiveness of cognitive behavioral therapy (CBT) in reducing premenstrual dysphoric disorder in female adolescence few limitations and recommendations are suggested.

The present study targeted the limited range of age female (13 to 18 years) it is suggested that for future researches to target other age groups as well like adult and older women. From the present study it is recommended that for future researches should focus on the complete criteria of premenstrual disorder because in this study focused only on the symptoms of premenstrual dysphoric disorder. And in future researches the role of anxiety and depression should be focused because PMDD leads to the different psychological disorders. It is also suggested that number of participants can be increased as this study has limited number of participants.

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