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Cognitive Behavior Therapy for students with psychological problems of Premenstrual Syndrome (PMS): A Prospective study

P. Pangajam[1]
T. Veeramani[2]

Abstract:

Premenstrual symptoms are affecting up to 75 percent of women population. It affects the physical and psychological wellbeing of women, and also it impairs their social functioning. The current study examined the efficacy of cognitive behavior therapy for students with premenstrual syndrome. Students were assessed with psychological tools of General health questionnaire, Premenstrual symptom screening tool, Role acceptance scale and psychological wellbeing scale. Those who scored above mean score of GHQ and PSST were taken up for the study.36 students were found to be having premenstrual syndrome out of 100 students, of them 6 were declined to participate in the study. Remaining 30students allotted randomly to therapy and control group equally. Both the groups were compared after a period of 2 months thorough Cognitive behavior therapy. Pre and Post assessment was done after the intervention of cognitive behavior therapy, the results show that therapy group improved significantly in relation to reduction of premenstrual syndrome than the control group. There was also a change of attitude towards menstruation, enhanced role acceptance and psychological well-being.

Keywords: *Premenstrual Syndrome, cognitive Behavior therapy, Role Acceptance and well-being.*

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I. INTRODUCTION

Menarche and menstruation are important aspects of woman's life. The menstrual cycle provides important body chemicals, called hormones, to keep the body healthy. The majority of the adolescent girls regard menarche as an important event in their development. Handling menstruation is considered a major challenge to every adolescent girl, which is a normal body function and it is considered that menstruation has become an additional source of distress in women. The profile of the woman's reproductive health is greatly influenced by the girl's reaction to menarche, her attitude towards menstruation, and more prominently behavior during it. Premenstrual Syndrome (PMS) is a group of physical, mood-related, and behavioral changes that occur in a regular, cyclic relationship to the luteal phase of the menstrual cycle and that interfere with some aspect of the women's life. These symptoms occur in most depending on the girl's knowledge of sexual development and her attitude towards her body, cultural belief, and onset of menstruation may involve feelings of excitement, fear of curiosity.

Menstruation is a subject of taboo, superstition, and folklore and the handling for these to the young girls may be liable for any abnormal reactions to menstruation. One of the fallacies which carries the support of many of the religious belief is that menstruating women is unclean. Suneela Garg and Tanu Anand(2015) reported as, within the Hindu faith, women are banned from participating in normal life while menstruating. She must be "purified" before she is allowed to come back to her family and day to day tasks of her life. Though, scientifically it is known that the cause of menstruation is ovulation followed by missed chance of pregnancy that results in bleeding from the endometrial vessels and is followed by preparation of the next cycle. As a result, there seems no reason for this notion to persist that menstruating women are "impure". This idea alone is enough to instill feelings of shame, embarrassment and resentment. Again, it is commonly believed that girls are in low physical state during menstruation and this attitude is encouraged by terms such as "poorly time". Cycles, resolve usually with beginning of menses, but certainly by end of menses. This cyclic symptom complex varies both in severity and in the degree of disruption of the person's work, home, or leisure life (Beckmann, et al., 2006).International Classification of Diseases (ICD-10) states that "PMS is characterized by an accumulation of physical, mood, cognitive, and behavioral manifestations that follow acyclic pattern, beginning between 1 to 2 weeks before monthly cycle (luteal stage) and vanishing on the main days of menstrual stream (follicular stage)". All late luteal manifestations are not PMS; many are a piece of the ordinary experience of women in the reproductive years. Minor cyclical changes that occur in a temporal relationship to the menstrual cycle and are relieved during menstruation. Recently a well conducted study by Anandhalakshmi et al., (2011) found in a sample of 300 students, among them 67% had premenstrual syndrome and 51% had dysmenorrhea.

American Psychological Association, Diagnostic and Statistical Manual, Fifth Edition (APA, DSM-5), defined *Premenstrual* dysphoric disorder (PMDD) can be distinguished from *Premenstrual Syndrome*(PMS) by the presence of minimum one affective symptom, such as mood swings, bad temper, and/or depression. Premenstrual

[1]Assistant Professor, Department of Clinical Psychology, SRM Medical College and Research Centre, Kattankulathur, Chennai, India.
[2]Professor & HOD, Department of Psychology, Government Arts College autonomous, Coimbatore, India.

symptoms are affecting up to 75 percent of women with usual menstrual cycles. A Clinically significant PMS occurs in 3 to 8 percent of women (Epperson CN, 2012), while PMDD affects about 2 percent of women. In India the *Prevalence* of *Premenstrual Syndrome* was 78.2% in Chandigarh, 42% in Vadodara, and Chennai 67% have widely varying *Prevalence*. Pandian, M. V et al (2016).

Premenstrual Syndrome and Role Acceptance: An insufficient number of studies have examined the connection between menstrual attitudes and Premenstrual Syndrome. While Song et al. (2013) stated that individuals having a negative attitude towards menstruation experienced PMS more severely, Guvenc et al. (2012) found that individuals, who considered the menstruation as a weakening experience and denied the menstrual symptoms, felt *Premenstrual Syndrome* much higher. (Song, 2013).

The awareness about menstruation of the women has an effect on their body image, gender identity, self-acceptance, sexual and health behavior (McMaster et al, 1997). Beliefs and approaches about menstruation are usually acquired before puberty. Menstruation is a sign of transition from childhood to womanhood and perceptions of menstruation is affected by sociocultural factors during pre-pubertal period. These insights are formed by personal understanding, age, myths, traditions, societal attitude, and cultural beliefs (Chua & Chang, 1999). Menstruation related information of people determine their response to this event. Some studies have shown that, negative physical and psychological changes during menstruation period are associated with the perception of menstruation (Houston et al, 2006).

Misra et. Al (2017) reported in their study that many students from medical field reported higher psychological symptoms than physical symptoms among women with premenstrual dysphoric disorder or women without premenstrual dysphoric disorder. This confronts the widespread notion that Indian women tend to somatize psychological distress more often than women from developed countries.

PMS seems to be cross cultural having source commonalities across ethnic groups and in different societies. The particular symptoms that predominate may vary among groups. Risk causes for the development of PMS have not been established. Epidemiologic studies have unsuccessful to show a consistent association between PMS and age, societal and economic status, diet, work out, menstrual cycle characteristics or personality. The only clinical condition that has been consistently found to be associated with PMS is an increased prevalence of prior affective disorders particularly major depression.Although stress does not cause PMS, clinical experience indicates that a change in stressors can affect the intensity of symptoms. A Cognitive therapy has an impact both on conscious verbally accessible knowledge and automatic non-conscious cognitions that contain information about past experiences. The forms occur through encouraging clients to examine thoughts that accompany events,when a negative mood occurs, the emphasis is on uncovering thoughts and exchanging counterproductive thoughts for more constructive ones, such an approach alters and the impact on, automatic negative cognitions by making these less accessible and intrusive.

These approaches may have a role to play in the management of PMS, the rationale would be to alter cognitions, coping styles, and behavior to enable the woman to cope more effectively with the somatic and affective changes occurring premenstrual. Because the most common complaints, i.e. depression, anxiety, tension, and anger have been shown to be amenable to cognitive behavioral approaches, such therapeutic approaches have considerable face validity. Kathleen et al. (2009) reviewed empirical studies of the cognitive behavior therapy for premenstrual syndrome and premenstrual dysphoric disorder (PMDD). They found that the efficiency of cognitive behavior therapy was statistically significant. They concluded that psychosocial intervention for PMS is effective after analyzing 7 empirical studies. Janda (2015) developed a unique modularized treatment approach of cognitive behavior therapy with lifestyle modification intervention for women with severe premenstrual syndrome or premenstrual dysphoric disorder. In the module, a complete set of session wise intervention strategies developed for the study which included psycho education about menstruation and PMS, cognitive interventions regarding PMS related dysfunctional cognitions, strategies to change dysfunctional behaviors, and targets lifestyle issues such as stress, relaxation, balanced diet, and sports. There are about 40% of the women population, who need combined management to correct the biological imbalances and disturbances and to manage the psychological and behavioral problems in result of PMS they experience. The study planned to systematically investigate the premenstrual syndrome and to use psychological method of cognitive behavior therapy for a sample of students who have been identified as suffering from PMS based on psychological tests.

II. METHOD

Sample: The design adopted was a simple randomized group design. The study was carried out at two stages. The first stage was administering psychological tools to screen the sample of 100 graduate college students who were undergoing medical and paramedical courses.

1. To find out the acceptance of the role and its relationship with therapeutic outcome.
2. To find out the efficacy of cognitive behaviour therapy in reducing premenstrual distress, and improved health status associated with premenstrual syndrome.

INCLUSION CRITERIA FOR COGNITIVE BEHAVIOUR THERAPY GROUP:

- Age range of 18 - 30 years
- Absence of other medical illness
- Those who score > 18 on PSST

EXCLUSION CRITERIA FOR COGNITIVE BEHAVIOUR THERAPY GROUP:

- women with any history of treatment for PMDD or who were currently taking psychotropic medication
- Those who have any mental illness
- Any medical illness
- Women those who have dysmenorrhea or amenorrhea

For the study, the subjects were recruited from the SRM Medical College with the permission of the concerned authorities. The participants for paramedical group included students from the Speech & Audiology department, Physiotherapy department & Occupational therapy department. The participants for the Medical group included M.B.B.S & Dental first year students. Permission from the respective head of the departments were taken. Participants were informed about the rationale of the study and the nature of the study. A brief introduction about Premenstrual Syndrome was given to the students. Subjects were advised that the study participation is confidential and informed consent was taken. The psychological tests were administered to the willing students in small groups of 10 to 15. Socio demographic details were taken. Following this, fixed set of Questionnaires were given to the students. Initially the General Health Questionnaire-28 was given to the participants to screen for presence of any psychiatric distress. The participants with high score on psychiatric distress were excluded. The GHQ-28 questionnaire was followed by the *premenstrual* symptoms screening tool, which was used to identify the participants with and without *Premenstrual Syndrome.* After the PMS Screening tool, the *Role Acceptance* scale was administered to measure the sex *Role Acceptance* of women with PMS and without PMS. Following it, the psychological well-being scale was administered to assess their mental health.

Description of the tools:

General health questionnaire (GHQ-28) (Sterling, 2011; Goldberg & Hillier, 1979):

The GHQ-28 was developed by David Goldberg in the year of 1978 and has since been translated into 38 languages. It was developed as a screening tool to detect those likely to have or at risk of developing psychiatric disorders, it is a 28-item measure of emotional distress. The GHQ-28 has four subscales, i.e. somatic symptoms (items 1–7); anxiety/insomnia (items 8–14); social dysfunction (items 15–21), and severe depression (items 22–28).the time taken to the test was less than 5 minutes. Every item is accompanied by four probable responses, Such as *Not at all, No more than usual, Rather more than usual*, and Much more than usual. There are different methods to score the GHQ-28. It can be scored from 0 to 3 for each response with a total possible score on the ranging from 0 to 84. by this method, a total score of 23/24 is the threshold for the presence of distress. Alternatively, the GHQ-28 scored with a binary method where *Not at all, and No more than usual score 0, and rather more than usual* and Much more than usual score 1. With this method score of above 4 indicates the presence of distress (Sterling, 2011). Test-retest reliability reported to be high i.e. 0.78 to 0 0.9 (Robinson & Price 1982) and interrater and intra-rater reliability have both been shown to be tremendous i.e. Cronbach's α 0.9−0.95 (Failde& Ramos 2000). High internal consistency has also been reported by Failde& Ramos (2000). The GHQ-28 correlates well with the Hospital Depression and Anxiety Scale (HADS) (Sakakibaraet al. 2009) and other measures of depression (Robinson & Price 1982).

Premenstrual symptoms screening tool (PSST) (Steiner, MacDougall& Brown 2003):

PSST was standardized by Steiner and Colleagues (2003), in line with DSM-IV criteria into a scale for rating the severity of PMS symptoms. The test consists of 19-item of two domains. The first domain includes 14 items related to psychological, physical, and behavioral symptoms and the second domain (five items) assess the impact of symptoms on women's functioning. Each item is rated on a four-point scale (absence of symptoms=1, *mild*= 2, *moderate*=3, *severe*=4). For diagnosis of PMS, the following criteria should be present: (1) at least one of the symptoms 1 to 4 is severe; (2) in addition, at least four of the symptoms 1 to 14 are moderate to severe; and (3) at least one of a, b, c, d, and e is moderate to severe. The Reliability and validity of the scale, ComputingCronbach's alpha coefficient was found to be 0.89 for the first domain, 0.91 for the second domain, and 0.93 overall; well above the threshold (0.7). Content Validity Ratio (CVR) and Content Validity Index (CVI) were used to establish quantitative content validity. The CVR and CVI were found to be 0.7 and 0.8, respectively, well above selected standards (0.62 for CVR and 0.78 for CVI).

Role Acceptance scale (Berry and MC Guire1972):

The *Role Acceptance* scale constructed by Berry Guire has been utilized to measure sex-Role Acceptance of the respondents. it consisted 41 *true-false* items, which are divided into 5 subscales namely a) *Feminine stereotypes* b) *Child bearing and rearing* c) *Body and genitals* d) *Sex and masturbation* e) *Menarche and menses*. Generally, these items reflect whether or not a subject like being a woman, feels positive about having and nursing babies, admit menstruation as a normal routine, understand the more dominant role of men and has conflicts of sexuality. As the items in and continue to grow and develop. Subscales c) Body and genitals and d) Sex and masturbation were not suitable for Indian women, these items were omitted therefore making it total of 24 items. A scoring key was devised according to how the authors judged they would be answered by subjects with high *Role Acceptance*. Each item was given a score of 'one' which corresponds to the scoring key.

RYFF's psychological wellbeing scale: The Ryff inventory consists of 42 questions. This test measures the students' self-acceptance, meaningful goals with a sense of purpose in life, autonomy, environmental mastery, personal Growth and positive relation with others. In detail it assess whether the student is autonomous in thought and action, have the ability to manage complex environments to suit personal needs and values. The answer format for all items comprised six ordered categories labelled from 'disagree strongly' to 'agree strongly'. Twenty items were positively phrased and 22 negatively phrased. Proceeding to analysis, negatively phrased items were reverse scored so that high values indicated well-being. This made it easier to identify base and upper limit effects.

After the completion of the assessments the scores were interpreted and feedback was given to the students, following which short term and long-term goals formulated.

Psycho education:

Students often have a poor idea about the psychological symptoms associated with PMS but then they are all aware of the physical symptoms and finding difficulty in coping with PMS. They were also educated about the symptoms and illness and enable them to cope with their problem effectively. The goal of the initial session is for the patient to develop an understanding of her own Symptomatology, through comprehensive Psychoeducation about PMS. This understanding lays the foundation for further treatment. Identifying and classifying one's own symptoms is necessary in order to eventually achieve change. At the beginning, the therapist works through with the patient what is meant by PMS, what symptoms it includes (physical vs. psychological) and how severe the patient's symptoms are. The difference between PMS and PMDD, following the diagnostic criteria, is also explained.

Cognitive behaviour therapy:

The students were explained regarding how stress affects their existing symptoms. They were made to understand that the stress reduction plays an important role in relieving PMS symptoms as stress exacerbates the premenstrual complaints. They were encouraged to follow Jacobson's progressive muscular relaxation. So that their PMS symptoms will be reduced. They were also advised to plan their work, social and family activities during days of cycle that she expects to be symptoms free. Relaxation were taught and explained to them that it is one of the techniques to manage stress and to reduce the physical and emotional arousal. By practicing the relaxation regularly will reduce the increased physiologic reactivity to stressors during the luteal phase, suggested increased arousal premenstrually. Behavioural coping skills were taught to them. One of the methods is stimulus control approach. It consists of becoming aware of the sources of stress or triggers that commonly give rise to problems during the luteal phase and taking effective action to prevent disharm or cope with such triggers.

Students were socialized to the cognitive therapy and explained about their active involvement required throughout the therapeutic process. They were made to become aware of the way in which thoughts influence feelings and there-by behaviour. Their dysfunctional beliefs that underlie the dysfunctional thinking, such as within few days menstruation will start how I will go to college, I can't perform well as other days because I am unable to handle this menstruation, it will not be resolved, no one can understand my problem and become irritable. They were taught to aware of the self-defeating thoughts, pessimistic view about over-coming PMS, negative mind set, negative beliefs, catastrophic consequences and schemas. All the above said procedures were carried out spread over a period of twice a week for two months.

III. STATISTICAL ANALYSIS

The Statistical Package for Social Science (SPSS) 20 version was used for statistical analysis. Descriptive statistics were done for socio demographic data. After checking the data for normality applied Parametric test. Inferential statistics, such as "t" test used to compare the means of two groups.

Table 1: Comparison of pre therapy scores of the control and therapy group (N=15 for each group).

Variables	Control group (N=15)	Therapy group (N=15)	't' value	Significance
GHQ Mean SD	 26.33 16.38	 26.67 16.07	1.000	NS
PSST Mean SD	 30.27 8.81	 31.00 9.18	1.01	NS
Role Acceptance Mean SD	 14.87 2.74	 15.20 3.98	.000	S
Psychological well being Mean SD	 162.80 15.13	 166.47 14.16	1.3608	NS

Table 1 Gives scores on with regard to the two groups, they do not vary significantly on GHQ, PSST, Role acceptance and psychological well-being total scores. Both therapy and control group are comparable on GHQ, PSST, Role acceptance and psychological well-being total scores, and role acceptance scores.

Table 2: comparison of the pre and post scores of the therapy group on PSST and the significance level. (N=15)

Therapy group	Mean	SD	't' value	Level of significance
Pre level	36.53	9.34	5.76	0.000 S
Post level	24.93	6.46		

Table 2: Shows that there is a significant reduction on the premenstrual symptoms after the intervention.

Table 3: Shows the comparison of the pre and posts assessment scores of the therapy group on role acceptance scale and level of significance. (N=15).

Variables	Mean	SD	t-value	Significance
Feminine stereotypes Pre level Post level	 6.47 7.20	 2.10 1.85	 -2.32	 0.03
Child bearing and rearing Pre level Post level	 6.33 7.13	 1.75 1.80	 -2.09	 0.05
Menarche and menses Pre level Post level	 1.80 2.13	 1.14 0.83	 -14.78	 0.00
Total Pre level Post level	 15.20 19.67	 3.98 1.98	 -6.99	 0.00

****Significant at the level of 0.005 (p<0.005)*

There is a significant improvement on menarche and menses, role acceptance and also on overall scores on role acceptance post intervention.

Table 4: shows the comparison of the pre and post assessment scores of the therapy group on Psychological Wellbeing and the significance level. (N=15 for each group).

Autonomy Pre level Post level	 15 15	 28.60 36.93	 3.86 1.71	-7.86	0.000 S
Environmental mastery Pre level Post level	 15 15	 28.67 36.47	 4.22 1.95	0.001	S
Personal Growth Pre level Post level	 15 15	 29.40 36.47	 4.67 1.95	1.27	NS
Positive Relation Pre level Post level	 15 15	 29.40 36.40	 4.67 2.87	0.83	NS
Purpose in life Pre level Post level	 15 15	 30.53 35.60	 4.88 3.33	2.24	0.005 S
Self acceptance Pre level Post level	 15 15	 30.40 38.67	 4.61 1.87	0.37	NS
Total Score Pre level Post level	 15 15	 178.73 220.40	 13.74 6.97	-13.52	0.00 S

****Significant at the level of 0.005 (p<0.005)*

IV. DISCUSSION

The 't' values revealed that there is a significant difference between the control and therapy group on PSST total and sub scale scores indicating that there is a reduction of distress in the subscale ofpain, concentration, Behaviour change, autonomic Reaction and Negative affect. There was a marked improvement in reduction of symptoms when compared control group depicts that the cognitive behaviour therapy is more effective. This is in the agreement with the findings of Nazari et al (2012) cognitive behavioural approach on reducing the PMS. They found that avoidance of worrisome thoughts reduced the anxiety. They accounted that cognitive therapy remarkably reduces psychological and physical symptoms as they found that awareness about the PMS and different techniques improve psychological wellbeing, lessen stress and boost self-confidence. similarly results of the present study showed improvement on psychological well-being of the students after the intervention of cognitive behaviour therapy. Their self-acceptance was improved as they started to accept their role, and associated menstruation, which made them to experiencepositive feelings about menstruation, acknowledges and accepts multiple aspects of their own self.

This proves the efficacy of cognitive behaviour therapy in support of objective of the study. The findings were similar to the findings of Black et al (1998) in reduction of psychological and somatic symptoms and of impairment of functioning. Their results showed that cognitive therapy was significantly more effective to the immediate treatment group than control group. The similar results which was arrived at the present study also indicates the effectiveness of the cognitive therapy which is one of the packages of comprehensive psychotherapy.Similarly, O'Brien et al (2011)reported cognitive behaviour therapy was efficient as non-drug-based treatment for PMS.

A study by Blake et al (1998) testified that cognitive therapy was significantly more efficient than the wait list group.In addition they found improvement in social functioning and reduction of somatic and psychological symptoms.

V. CONCLUSION

Two groups are comparable on all variables, hence improvement shown after the treatment is attributable to the psychotherapeutic intervention. The therapy group has shown significant overall improvement following cognitive behaviour therapy on all the variables studied except on the subscales of feminine stereotypes, child bearing, and rearing. cognitive behaviour therapy is found to be effective in reducing premenstrual distress. There is reduction in experience of pain, improved concentration, behaviour change, change in negative affect and autonomic reaction. There is also a significant improvement in psychological well-being after implementing the psychotherapyand improvement in role acceptance and menarche and menses. Constraint of the current study is the sample size is small, generalization is guarded. This study has contributed towards expanding the horizon of psychotherapeutic intervention in the management of premenstrual syndrome and emphasize the importance of psychological intervention in addition to medical management.

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