

Managing Premenstrual Symptoms (PMS) Using Cognitive Therapy Interventions: A Systematic Review

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Abstract

Premenstrual symptoms whether physical or psychological, are universally known to affect the quality of life of women of reproductive age. There are various evidence-based intervention studies for PMS including exercise, yoga, CBT, etc, but the number of empirical studies on relaxation and cognitive psychology-based interventions such as positive self-talk and positive affirmations as an effective treatment for PMS is comparatively less. Hence, this paper reviewed research based on the potential of relaxation blended with cognitive psychology-based interventions, to improve PMS. Data was obtained through a manual search using Google Scholar. Excluding inaccessible and irrelevant studies, 15 articles were chosen for review. Findings include potential positive qualities of cognitive psychology-based interventions such as positive affirmations and positive self-talk in reducing PMS. Relaxation blended with cognitive psychology-based interventions through m-health can be considered an efficient treatment option for amelioration of premenstrual symptoms after appropriate empirical validation.

KEYWORDS: Premenstrual Symptoms (PMS), Relaxation, Positive Self-Talk, Positive Affirmations.

Introduction

Background of the study

Premenstrual Symptoms include physical and/or psychological symptoms that appear during the luteal phase of the menstrual cycle such that they occur around one week before the onset of menses, improve gradually after the onset of menses and disappear in the post menstrual weeks [2, 33]. Though the exact etiology and prevalence of premenstrual symptoms is not known, hormonal imbalances (attributed to change in levels of estrogen and progesterone), genetic predispositions and life style factors (such as physical inactivity, lack of exercise, excessive consumption of coffee, lack of sleep, smoking) etc. are attributed to be the causes, while around 80% women of the reproductive age tend to experience physical or emotional symptoms prior to the onset of menses. In India, an estimated 40% and 8% women suffer from Premenstrual Syndrome (PMS) and Premenstrual Dysphoric Disorder (PDD) respectively [8, 12, 17, 26, 32, 41]. PDD being the most severe premenstrual disorder, predominantly showcases psychological symptoms (irritability, depression, insomnia or hypersomnia, anxiety or tension, difficulty in concentrating etc.) while the most globally prevalent premenstrual symptoms are known to be physical (breast tenderness joint or muscle pain, bloating, cramps etc.), thus negatively affecting the quality of life and psychosocial functioning of the individuals suffering [2, 7].

Research suggests considerable improvement in premenstrual symptoms by engaging in regular exercise (aerobic, pilate, swimming), yoga (asanas, meditation, pranayama), cognitive behaviour therapy (CBT), mindfulness-based stress reduction. Few studies suggest that relaxation also has a positive potential to reduce PMS and hence for a better understanding of the efficacy of relaxation to improve PMS further research is suggested [4, 5, 11, 24, 25, 35, 40].

Relaxation Technique

Progressive muscle relaxation technique (PMR) developed by Dr. Edmund Jacobson in 1930's, is known to be one of the easiest relaxation techniques to be learnt and administered. Being of free-will, easily available, economical and free from any after effects, it is a systematic technique that helps induce a deep state of relaxation [20, 23]. During PMR each muscle of the body is consciously tensed (contracted) for a period of about 5-7 seconds and then consciously relaxed for 15-20 seconds one by one. Such deep relaxation of every muscle in the body in turn helps reducing stress, anxiety and depressive moods, headache, fatigue, pain associated with PMS [6, 9, 18, 19]

Cognitive Psychology Based Techniques

Considering the fact that many premenstrual symptoms are psychological such as stress, depressive moods, anxiety, tension etc which compromise the quality of life and wellbeing of women, application of techniques

which particularly reduce these symptoms is necessary. Cognitive techniques such as positive self-talk and exposure to positive affirmations help reduce negative and worrying thoughts. Rana, (2018) explains positive affirmations as positive phrases or statements that help challenging negative thoughts. They also help in boosting self-esteem, plays a motivational role and also helps combat frequent negative self-talk. Self-talk refers to our internal conversations that we have with ourselves and thought patterns which tend to have a major influence on the way in which we feel and behave. According to Beck et, al., (1979; 2005) negative self-talk is a noteworthy predictor of depression. Similarly, depressive symptoms or sadness during PMS may be due to negative self-talk which may tend to induce negativity onto our subjective views of ourselves and others thus affecting our personal well-being and relationships with others. Positive self-talk is a cognitive psychological technique which helps reduce negative self-talk, thus reducing anxiety, depression [14, 37, 38, 39].

Purpose of the study

This paper seeks to provide a narrative synthesis of the positive efficacy of relaxation technique and cognitive psychology-based interventions such as positive self-talk and positive affirmations for the amelioration of premenstrual symptoms. Existing literature pertaining to relaxation, positive self-talk and positive affirmations as an effective technique to reduce symptoms such as depressive mood, irritability/ anger, stress, tension, anxiety, pain, fatigue etc were reviewed, in order to understand the positive potential of relaxation technique blended with cognitive psychology-based interventions to improve premenstrual symptoms.

Methods

Data was drawn from the electronic database Google Scholar through manual search. Keyword string used for the search was ‘premenstrual syndrome, relaxation, positive self-talk, positive affirmations, depression, anxiety’.

Eligibility Criteria

The inclusion criteria used for articles were as follows: i. Studies which used relaxation techniques and/ or cognitive psychology-based interventions such as positive self-talk and/or positive affirmations regardless of age (excluding children) and ethnicity of participants. ii. Quasi experimental and experimental design-based studies where relaxation and/or cognitive psychology-based interventions were used as treatment and relevant articles interventions. iii. Studies with variables such as premenstrual symptoms and symptoms associated to PMS such as depression, anxiety, pain etc were used as dependent variables. iv. Studies with clinical population of Premenstrual Dysphoric Disorder (PDD) and Depression.

The exclusion criteria used to eliminate articles were as follows: i. review articles ii. Studies which used Cognitive Behaviour Therapy (CBT), Rational Emotive Behaviour Therapy (REBT) as treatment. iii. Studies including male participants. iv. Studies where PMS-associated symptoms were just one among three or more other dependent variables.

Studies with variables associated with PMS but not limited to pain, depression, anxiety, stress etc as dependent variables and treatments such as relaxation, positive self-talk or positive affirmations alone or integrated were used as the purpose of the review was to identify the positive potential of relaxation blended with cognitive psychology-based interventions for healing premenstrual symptoms. Review papers were excluded as the main aim of the study was to focus on the outcomes of relaxation and cognitive psychology-based interventions to reduce PMS thereby including only original researches.

Data Collection

A manual data base search on Google scholar was carried out using the keyword string ‘premenstrual syndrome, relaxation, positive self-talk, positive affirmations, depression, anxiety’. Out of 1,840 articles, the author screened 15 articles by elimination based on the inclusion and exclusion criteria. Duplicate, irrelevant and inaccessible articles were also excluded.

Results

Table 01: List of studies including research design, population, sample size, intervention and major findings.

Sl. No	Study	Research Design	Population	Sample Size	Intervention	Major Findings
1	Marfuah, et al., 2021	Quasi experimental pre-post design with control group	Adolescents with PMS	52	Progressive Muscle Relaxation (PMR) by mobile health	PMR using m-health was effective in reducing PMS

2	Arquiza, 2020	Randomized two group pre-post design	Predominantly college going females	37	Virtual positive affirmations	Helped in increasing students' self-esteem and well-being
3	Olyaiekhachic , et.al., 2020	Pre-Post design with control group	Nurses working in Emergency wards	62	Positive Self-Talk training	Positive Self-Talk was beneficial in reducing job related stress
4	Rahayu, & Rizki, 2020	Pre-post design with control group	Pregnant women (over 36 weeks of gestation)	30	Positive Affirmations	Positive affirmations help reducing anxiety in pregnant women during delivery
5	Ferreira, & Kulkarni, 2019	Experimental pre-post design	Females with PMS (18-26 years)	30	Mitchell's Relaxation Technique	Relaxation helped reduce fatigue and headache
6	Gayathri, 2018	Quasi-experimental pre-post design with control group	Adolescent girls with PMS	60	Jacobson's Progressive muscle relaxation therapy (PMR)	PMR was effective in alleviating symptoms of PMS in the school setting
7	Rana, 2018	-	-	-	Positive Affirmations	Positive affirmations help in bringing about psychological well-being
8	Kimiyaee Asadi, Jadidian & Aslani, 2016	Quasi-experimental pre-post design with control group	Women suffering from PMS disorder	80	Group A: Positive self-talk, Group B: Relaxation and Group C: a combination of both	Combination of both were found to be more effective than stand alone
9	Rana & Kumar, 2016	Randomized pre-post design with control group	Females suffering from Cardio-vascular disease (35-80 years)	30	Positive Affirmations	Affirmations were found to have a significant effect on variables such as stress, anxiousness and depressive symptoms in female patients with cardio-vascular disease
10	Jasuja, et. al., 2014	Randomized pre-post design with control group	Females having at least an affective or somatic symptom of PMS	60	PMR using recorded instructions	PMR helps alleviate PMS symptoms including anxiety and depression
11	Khalatbari & Salimynezhad, 2013	Randomized pre-post design with control group	Female dormitory students suffering from PMS	30	Relaxation	Improved PMS with significant reduction in depression symptoms, stress and anxiety
12	Hamilton, et. al., 2011	Quasi-experimental pre-post design with control group	Breast Cancer Survivors	38	Positive Self-Talk	No significant change was found in the levels of anxiety, depression or mood disturbance in study participants
13	Hernandez-Reif, et. al., 2000	Randomized two group pre-post design	Women diagnosed with Premenstrual Dysphoric Disorder (PDD)	24	Group A: Massage Therapy, Group B: Progressive Muscle Relaxation Therapy (PMR)	Relaxation helped reduce anxiety. Massage therapy helped reduce pain, anxiety and also improved mood
14	Peden, et. al., 2000	Randomized pre-post design with control group	College going females (18-24 years) who were at a risk for developing	92	Positive Affirmations	Positive affirmations were beneficial in reducing negative symptoms

15	Goodale, Domar, & Benson, 1990	Three group pre- post design	depression Females with 46 PMS	Group A: Charting, Group B: Reading, Group C: Relaxation response	Regular relaxation response can be an effective treatment for physical and emotional symptoms, particularly for women with severe symptoms
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Discussion

All included studies except one showed positive effects of non-pharmacological approaches in amelioration of PMS or associated symptoms. Most of the studies being control group comparisons showed significant differences in experimental and control group after treatment and no side-effects were reported. The above-mentioned studies can be broadly divided into two themes:

Interventions applied to participants with PMS

Studies which have included females with PMS as the population will be included under this theme.

Relaxation

All the studies that used relaxation as an intervention mentioned in Table 01 can be included under this theme as these studies were carried out on females with PMS or PDD. Relaxation interventions were applied using different techniques in studies though some of them incorporated progressive muscle relaxation [10, 19, 25]. Study carried out by Marfuah, et. al., 2021, on adolescents with PMS incorporated Progressive muscle relaxation (PMR) through mobile health (m-health). Mobile health refers to the use of wireless devices like mobiles in the field of health care [14]. Mobile applications were used in the above study to provide progressive muscle relaxation which helped in reducing PMS. Another study conducted by Jasuja, et. al., 2014, provided recorded instructions for PMR to participants which significantly helped alleviate symptoms such as depression and anxiety. Other studies used unspecified relaxation techniques thus reducing anxiety, depression, stress and other physical and emotional symptoms [13, 21] while one of study incorporated Mitchell's relaxation which helped reduce fatigue and headache in women with PMS [9]. Massage therapy was also found to reduce pain and premenstrual distress. Massage helps the body relax thus reducing pain [1, 15]. Relaxation techniques hence can be considered as an effective technique in reducing PMS physical as well as some psychological symptoms.

Relaxation Blended with Positive Self-Talk

One of the studies mentioned in Table 01 used a three-group pre-post design, where one group was given relaxation, a second group was given positive self-talk training and third group was given an intervention integrating relaxation with positive self-talk. It was found that significant differences in PMS was found in group three as compared to group one and two, where a relaxation and positive self-talk training were intergrated as an intervention for PMS, though positive self-talk or relaxation alone were also found to be beneficial in healing symptoms [22]. The results of this study seem to be quite crucial as very few studies seem to have empirically tested using combination of relaxation with cognitive psychology-based interventions to reduce PMS.

Interventions applied to participants without PMS

Studies which have included females without PMS as the population will be included under this theme.

Positive Affirmations

Positive affirmations are positive phrases or statements that help challenging negative thoughts and bringing about psychological well-being [30]. Arquiza (2020), conducted a study incorporating virtual positive affirmations as an intervention on collage going females which also showed a significant increase in the participants well-being and self-esteem. Another study which used pre-post design with control group, using positive affirmations as the intervention on pregnant females was found to reduce anxiety during delivery [29]. Positive affirmations were also found to reduce negative thoughts in college going females who were at a risk of developing depression [28]. In females with cardiovascular disease, positive affirmations intervention was found to bring about significant reduction in anxiety, depressive symptoms and stress [31]. The above study results indicate that positive affirmations can help reduce psychological symptoms associated to PMS in females such as stress, anxiety, depressive mood, reduced well-being etc. Though this cannot be ascertained through a review,

application of positive affirmations as an intervention to reduce PMS symptoms can be considered and needs to be empirically validated in the respective population in order to generalize the results.

Positive Self-Talk

Positive self-talk is a cognitive psychology-based technique that helps reduce negative self-talk, thus reducing anxiety, depression, etc. [14]. As mentioned earlier positive self-talk alone or combined with relaxation does help reduce PMS [22]. Also, positive self-talk was found to be beneficial in reducing job-related stress in female nurses working in emergency wards [27]. In another study with breast cancer survivors, a positive self-talk training intervention was found to show no significant differences in levels of anxiety, depression, and mood disturbances [14]. Though one of the studies showed no reduction in psychological PMS-related symptoms in female participants, others did. Hence positive self-talk also can be considered as an intervention with a positive potential for healing premenstrual symptoms, though generalizing the results can be done only after empirically validating the same.

Conclusion

Relaxation can be considered as a non-pharmacological treatment option for premenstrual symptoms. The review contributes to the existing literature by pointing out cognitive psychology-based interventions such as positive affirmations and positive self-talk which can be considered as viable treatment options after being validated empirically on the desired population. Finally, the review emphasizes the need for further research using mobile health incorporating relaxation blended with cognitive psychology-based interventions which will help females gain immediate access whenever required and also provide efficient alleviation of premenstrual symptoms.

Implication

Firstly, these findings offer promising avenues for healthcare professionals and practitioners to develop tailored interventions for individuals experiencing PMS. By incorporating cognitive-behavioral techniques such as cognitive reappraisal and relaxation exercises into treatment plans, clinicians can empower patients with practical tools to manage the emotional and physical symptoms associated with PMS more effectively.

Secondly, raising awareness about the efficacy of cognitive-based interventions and relaxation techniques for PMS could help reduce the stigma surrounding menstruation-related issues. By promoting evidence-based strategies for symptom management, individuals experiencing PMS may feel more empowered to seek support and engage in self-care practices without fear of judgment or misunderstanding.

Additionally, the integration of cognitive-based interventions and relaxation techniques into educational programs and public health initiatives could foster greater understanding and acceptance of menstruation as a natural physiological process. By equipping individuals with skills to cope with PMS symptoms, such initiatives can promote overall well-being and enhance quality of life for individuals across diverse demographics.

Furthermore, future research could explore the long-term effects and sustainability of cognitive-based interventions and relaxation techniques for managing PMS. Investigating factors such as adherence, durability of symptom relief, and potential synergistic effects with other treatment modalities could further optimize intervention strategies and inform clinical practice.

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