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Effect of stress relieving technique on individuals with psychological stress during menstruation among AMU students

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Abstract

Title: Effect of stress relieving technique on individuals with psychological stress during Menstruation among AMU student.

Objective: The objective of this study is to identify the effectiveness of Jacobson's Progressive Muscle Relaxation (JPMR) Technique in coping with stress during Menstruation compared with self-awareness.

Background: Most of the previous studies were only focused on the stress level of Menstruating women but less study on the techniques to reduce the stress level on Menstruating women.

Subjects: 40 subjects (40 females) with mean age of 22.3 (range 19 to 25) participated Volunteered in this study. A subject was randomly assigned to either group A or group B.

Method: All the subjects were given DASS21 Questionnaire to measure the level of Stress. Additionally, subjects in group A received Jacobson's Progressive Muscle Relaxation Technique for the time duration of 10minutes during each day of Menstruation while subjects in group B awareness of stress management were taught and pamphlets were given to cope with the stress during menstruation. DASS21 Questionnaire was given to all participants, stress score was taken on all subject for pre and post test.

Result: Independent and paired t test was done using Graph Pad Prism Version 6. From the Independent 't' test analysis Jacobson's Progressive Muscle Relaxation is significantly different from Conventional Method. When compared between groups on post intervention, there is significant difference between both interventions.

Conclusion: This study has concluded that Jacobson's Progressive Muscle Relaxation is more effective in reducing the level of stress compared to the conventional method.

Keywords: Menstruating Women, Stress, DASS21, Jacobson's Progressive Muscle Relaxation (JPMR) Technique etc.

Introduction

The Reproductive Cycle-This is a series of events occurring regularly in females every 26 to 30 days throughout the childbearing period. The cycle consists of a series of changes taking place concurrently in the ovaries and uterine walls, stimulated by change in blood concentrations of hormones. Hormones secreted during the cycle are regulated by negative feedback mechanism. The hypothalamus secretes luteinizing hormone releasing hormone (LHRH) which stimulates the anterior pituitary to secrete. The hypothalamus responds to changes in the blood level of estrogen and progesterone. It's stimulated by high level of estrogen alone (as it happens at the first half of the cycle). The average length of the cycle is about 28 days. By convention the days of the cycle are numbered from the beginning of the menstrual phase, which usually lasts about 4 days. This is followed by proliferation phase (about 10days), then secretory phase (about 14 days). Where by menstrual irregularity becomes a major gynecological problem in adolescence and adult life. The spectrum of menstrual irregularities ranges from disorder of cycle length to disorder of flow. Apart from the physiological variation, many other factors have been found to cause menstrual disorder in adolescent phase, which usually lasts about 4 days. This is followed by proliferation phase (about 10days), then secretory phase (about 14 days). Where by menstrual irregularity becomes a major gynecological problem in adolescence and adult life. The spectrum of menstrual irregularities ranges from disorder of cycle length to disorder of flow. Apart from the physiological variation, many other factors have been found to cause menstrual disorder in

adolescent. These include environmental nutritional, drugs physical activities and stress. Perceived stress in the college setting may take the form of academic stress. This involves multiple stressors such as academic demands, time, health related and self-imposed type of stressors. Therefore, stress management towards menstrual cycle would be essential. Fluctuation of hormones during menstrual cycle, even during pregnancy, puberty, menopause, and menstrual abnormalities does influence the occurrence of stress, though the stress varies in between individuals, time scope, and events of personal life during the menstruation. Occurrence of female's slight hypercortisolism which also plays role in occurrence of anxiety, eating disorder, and mood cycle during the event of menstruation. Many normal women experience variations in mood, of small amplitude, throughout the menstrual cycle. These changes may be exaggerated

particularly in response to a difficult environmental situation. Psychological symptoms such as irritability, depression and tension, which were most predominantly in the premenstrual period, were very significantly correlated with neuroticism. Irritability and depression might lead to loss of temper, violence and assault. Lethargy and depression might lead to situational neglect and depression to suicide of all of which crimes do occur more frequently during this menstrual period. Stress is a general response to any event that disturbs body's psychological balance or normality in any way. Stress projects on individual's behavior, communication and efficiency in task performance. It is also a major factor in academic environment experienced by undergraduates. It is stated that incline in level of stress has chances to temporarily stop menstrual period, also known as secondary amenorrhea.

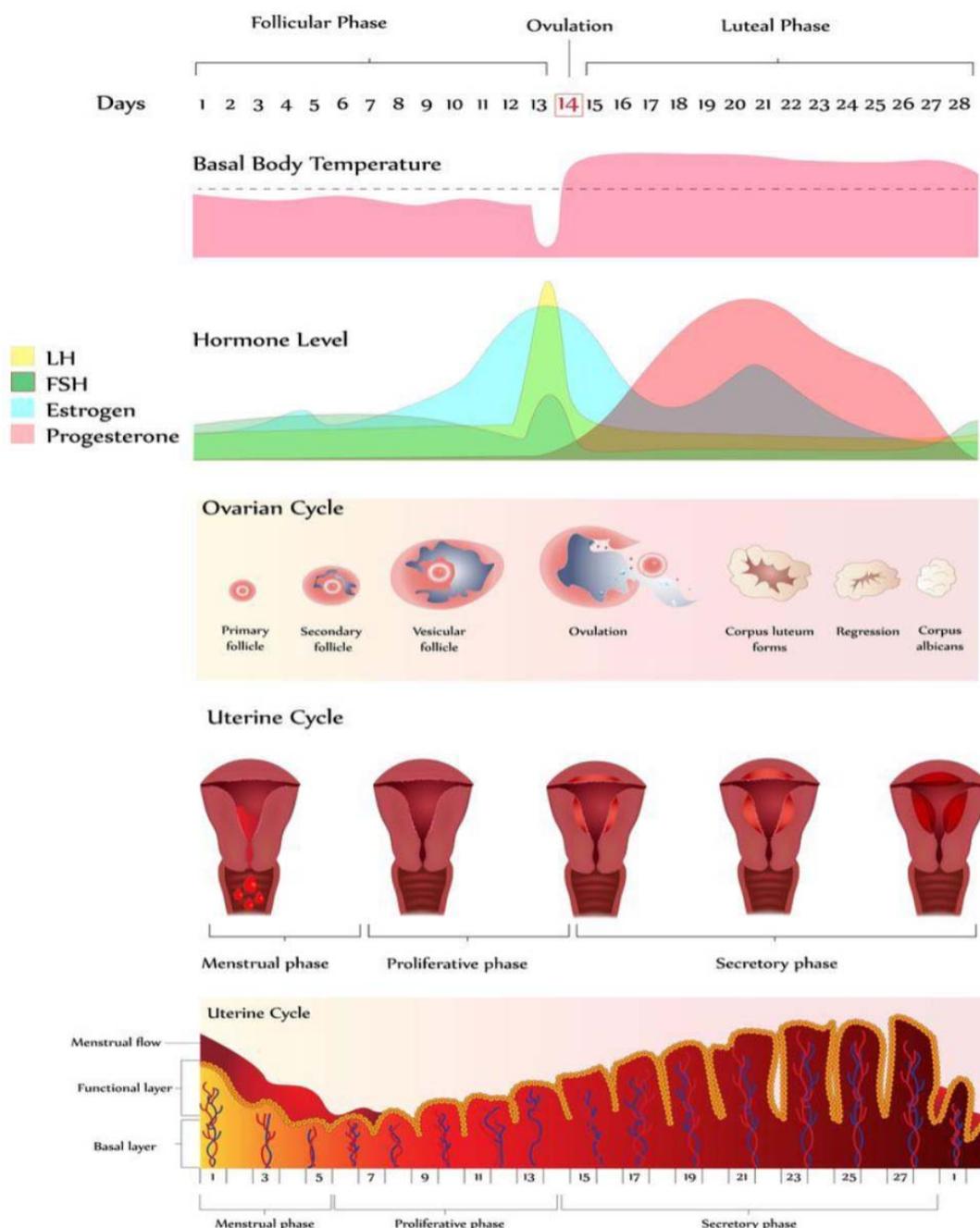


Fig 1-1: Changes occurring during menstruation

Materials and Methods

Study design: A Comparative Design

Sampling method: Convenience Sampling

Study location: This study was conducted in physiotherapy lab, Asia Metropolitan University at Jalan Kemanchahaya Batu 9, Cheras.

Sampling: Subjects who satisfy the inclusion criteria was taken for the study (N=40). They were selected based convenience sampling. The samples were chosen among Asia Metropolitan University. The subjects were made to understand the procedure properly informed consent was given before starting the study. The inclusion criteria of this study is female college students age 18-26 years old, subjects with normal regular menstrual cycle. Subjects should have persistent psychological changes during menstruation and should have the ability to understand the questionnaire. Meanwhile the exclusion criteria for this study are married women's, history of menstrual abnormalities, non-smoker and alcoholic, under medication for menstrual pain or under hormonal replacement therapy.

Study methodology

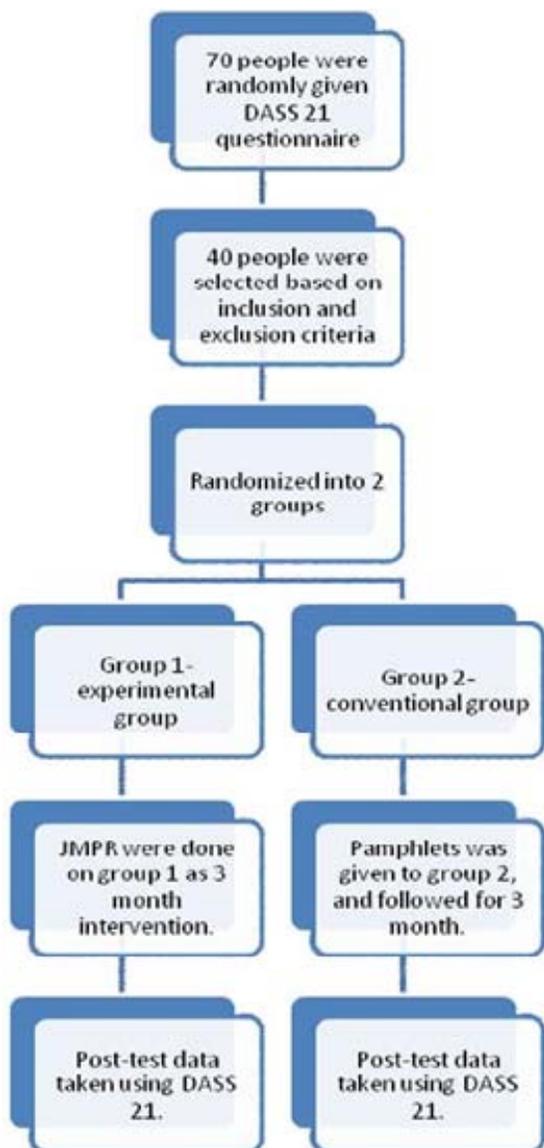


Fig 2

Subjects were randomly assigned into 2 groups by allotting 20 subjects per group. All subjects selected for the study were given the questionnaire as a pre-test record. The experiment groups were assigned to perform Jacobson's Progressive Muscle Relaxation Technique to determine the efficiency of the method in reducing stress during menstruation. The other group was given pamphlets on managing psychological effect during menstruation. All subjects met the inclusion criteria and out of exclusion criteria. In the experimental group, the subject was taught to perform Jacobson's relaxation technique step by step for proper understanding and accuracy of implementation of the method.

Procedure



Fig 3: Positioning of subject performing JPMR

The procedures are by

Gently pull your toes up towards your knee - just a little bit - hold briefly - and let go. Recognize the difference. Press your heel into the floor - hold - and let go Pull your knee together - hold briefly - now let them drift apart a little. Be aware of the new position. Squeeze your buttock together - hold - now let go. Gently pull in your tummy muscles towards your spine - hold briefly - now let go. Feel the difference. Shoulders - gently pull them up towards your ears, just enough to recognize the tension - hold briefly - now let go. Recognize the new position. Gently press your elbow and upper arms to the side of your body - hold for a moment - now let go. Hands - gently clench - hold and let go. Push your head forward slightly - hold briefly - now let your head go back to a balanced position. Feel the difference. Grin your teeth together - hold briefly - now let your jaw sag slightly. Feel the difference. Lips - press together - now let go until hardly touching. Purse your lips - now let go and feel the difference. Press your tongue briefly to the roof of your mouth - hold - and let it drop loosely. Feel the new position. Eyes - screw them up a little - hold and let go. Forehead - frown a little - hold - now let go. Now spend a few moments enjoying the feeling of release, releasing a little more with each exhale. 40 subjects were selected for the study. Subjects were randomly assigned into 2 groups by allotting 20 subjects per group. All subjects selected for the study was given the questionnaire as a pre-test score record then the subjects were taught to perform the interventions. The subjects in experimental group were taught to perform Jacobson's Muscle Relaxation Technique on the first appointment. The following consequent two month of intervention was done by the patient themselves at their own comfort. The subjects perform this intervention once a day from the first day to the last day of menstruation. At the end of the 3rd month, post test score using DASS Questionnaire 21

was once again taken. In the other group, awareness of stress management was taught and pamphlets were given to cope with the stress during menstruation.¹⁸ at the end of the 3rd month, post test score using DASS Questionnaire 21 was once again taken. All data collected was then analyzed for its result.

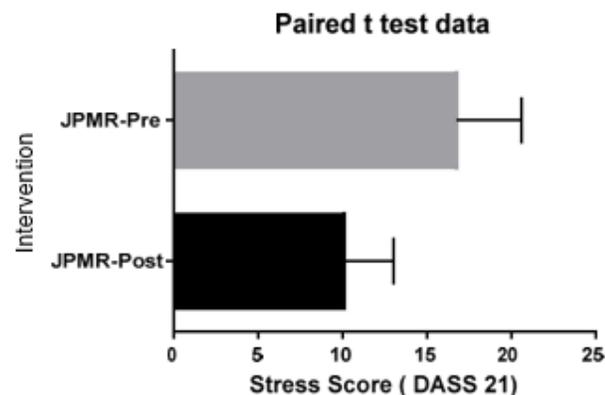
Analysis of data and Results

The result of this study was analyzed in terms of stress which is indicated by decrease in DASS scale scores. The experimental group (A) and control group (B) differences were compared so as to evaluate the effectiveness of two interventional techniques under consideration in the present study.

Statistical analysis

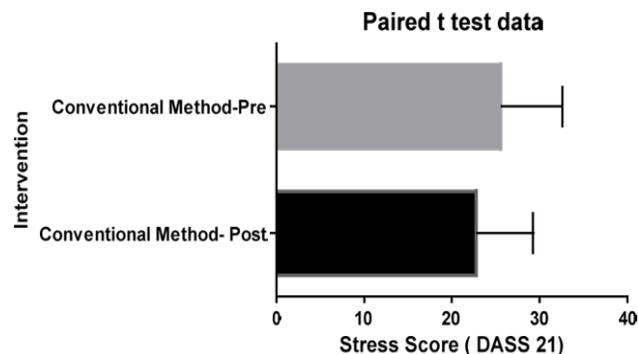
Statistical analysis for the present study was using the statistical software Graph Pad Prism Version 6 so as to verify the result obtained. For this purpose data was entered into an excel spread sheet, tabulated and calculated. Various statistical measures such as mean, standard deviation and test significance such as independent 's' test and paired 't' test were utilized for this purpose for all the available scores in all the participants. Comparison of the pre interventional and post interventional outcome measured between the groups was done by using independent 't' test. Probability values of less than 0.05 were considered statistically significant.

Pre Test and Post Test Comparison of Jacobson's Progressive Muscle Relaxation Technique (JPMR) and Conventional Method



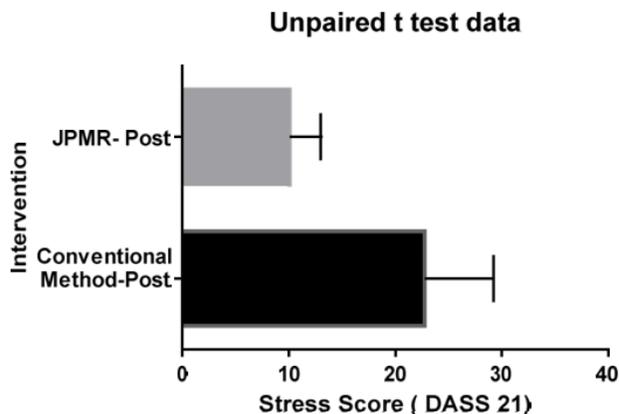
Pre-Test and Post-Test comparison of Jacobson's Progressive Muscle Relaxation Technique

The pre-test and post-test values of Jacobson's Progressive Muscle Relaxation Technique was analyzed using Paired t-test. The mean value of pre and post test for Jacobson's Progressive Muscle Relaxation Technique is 6.65



Pre-Test and Post-Test comparison of Conventional Method

The pre-test and post-test values of Conventional Method was analyzed using paired t-test. The mean value of pre and post test for conventional method is 2.75



Post-Test comparison of Jacobson's Progressive Muscle Relaxation Technique with Conventional Method

The post test values of Jacobson's Progressive Muscle Relaxation Technique and Conventional Method was analyzed using unpaired t-test. The mean value of post test for Jacobson's Progressive Muscle Relaxation Technique and Conventional Method is 12.70 ± 1.587

Descriptive Statistics

Descriptive Statistics			
	Mean	Standard Deviation	n
Group A	6.65	2.601	20
Group B	2.75	1.41	20
Unpaired t-Test			
t-Statistic	8.003	Result	
Degrees of Freedom	38	Reject the null hypothesis.	
Critical Value	4.842	Conclusion	
95% Confidence Interval	-15.91 to -9.487	Group A is significantly different from Group B, T (38) = 8.003. P value = 0.0012 We are 95% confident that the mean difference lies between -15.91 and -9.487	

Based on the data collected and obtained result on the comparison between Jacobson's Progressive Muscle Relaxation Technique and Conventional Method, we can conclude that compared to Conventional Method, Jacobson's Progressive Muscle Relaxation Technique show a significant difference.

Discussion

The clinical trial was conducted to study the efficacy of Jacobson's Progressive. Muscle Relaxation with conventional method among Asia Metropolitan University female students on 3 month duration, in the terms of stress on Depression Anxiety Stress Scale(DASS 21).In this study outcome measures were taken by (DASS 21) which is used to assess level of stress. The mean data obtained for the experimental group is 6.65, with standard deviation of 2.601. Meanwhile in the conventional group, the mean data is 2.75, with the standard deviation of 1.41.After the intervention of Jacobson's Progressive Muscle Relaxation Technique and Conventional method respectively, the post-test data showed result of 12.70

± 1.587 , which is mild reduction in the stress level during menstruation on the conventional group compared to the post-test result for the experimental group showed a significant drop in the result compared to its pre-test data. This indicates the proven effectiveness of the Progressive Muscle Relaxation Technique as mentioned by different researcher earlier, such as Chelley K, *et al*,^[4] Robert L Wool folk, *et al*,^[21] and etc. From the Independent's test analysis Group A is significantly different from Group B, $t(38) = 8.003$ $p = 0.0012$, with 95% confident that the mean difference lies between -15.91 and -9.487. The findings indicates the effectiveness of Jacobson's Progressive Muscle Relaxation Technique in management of stress, in this case it does reduces stress during menstruation.

Conclusion

The finding of this study shows that subjects who undergone Jacobson's Progressive Relaxation Technique has to reduction in their stress level during menstruation whereas the subjects that participate in the conventional method does not show much reduction in the stress level during menstruation. Therefore, Jacobson's Progressive Relaxation Technique is beneficial in reducing the stress level during menstruation among AMU female students. According to this study, Jacobson's Progressive Muscle Relaxation should be introduced to all females during their menstruation. This beneficial intervention should be followed by all regardless of any age group. Based on the results of my study I conclude that Jacobson's Progressive Relaxation Technique shows more effectiveness compared to conventional method. Progressive relaxation method is advisable in reducing overall stress of individuals in current community.

Limitation of study

- Small sample size
- Stress cannot be measured accurately
- Intervention was able to be supervised only on the initial appointment
- Follow up was not been done crucially for each month
- Duration of the study was short
- Lack of previous study

Recommendation

- More subject should be recruited
- The study should be conducted for a longer period of time.
- Interventions should be crucially supervised on each appointment
- Effect of other relaxation technique can be compared
- A comparison between relaxation techniques should be done

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