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To study the effectiveness of transcutaneous electrical nerve stimulator (Tens) and conditioning exercises in females with primary Dysmennorhea

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Abstract
Dysmenorrhea is defined as difficult menstrual flow or painful menstruation. Primary dysmenorrhea is defined as menstrual pain not associated with macroscopic pelvic pathology (i.e. absence of pelvic disease). It typically occurs in the first few years after menarche [3] and affects up to 50% of postpubescent females. In obstetrics and gynecology, TENS has been found to be effective in alleviating labor pain. [8] Pain relief with TENS is postulated as involving two possible mechanisms, the gate-control theory as proposed by Wall and Melzak in 1965, [9] or endorphin-mediated pain relief. Conditioning exercise has been found to reduce menstrual discomfort through increase in vasodilatation, and decrease in ischemia. This reduces the pain. So, conditioning exercise helps in smoothing an aching back, relieving pain, improving flexibility, restoring mobility increasing circulation in the spinal tissues and joints, relaxing tense uterine muscles and maintaining good abdominal tone.
In this study, 40 female Participants of age group 15 to 24 yrs. were divided into two groups each of 20 group A and group B Respective Group A received TENS (during menstrual cycle) and conditioning exercises thrice a week for a period of three months' group B received only conditioning exercises for thrice a week for a period of three months the present study concludes that high frequency TENS and Conditioning exercises has symptomatic relief in reducing pain and improving the Quality of life in females with primary dysmenorrhea than only conditioning exercises.

Keywords: primary dysmmenorhhea, high frequency tens, conditioning exercises, VAS, MMDQ questionnaire

1. Introduction
Dysmenorrhea may affect more than half of menstruating women, and its reported prevalence has been highly variable. A survey of 113 patients in a family practice setting showed a prevalence of dysmenorrhea of 29-44%, [20] but prevalence rates as high as 90% in women aged 18-45 years have been reported [1]. The use of oral contraceptives (OCs) and nonsteroidal anti-inflammatory drugs (NSAIDs), both of which are effective in ameliorating symptoms of primary dysmenorrhea, may confound the prevalence. Primary dysmenorrhea peaks in late adolescence and the early 20s [21]. The incidence falls with increasing age and with increasing parity. The prevalence and severity of dysmenorrhea in parous women are reportedly significantly lower in many [7, 22, 23] but not all [1] studies. No significant difference with respect to prevalence and severity of dysmenorrhea was found between nulligravid women and those in whom pregnancy had been terminated by either spontaneous or induced abortion [7]. In an epidemiologic study of an adolescent population (aged 12-17 y), Klein and Litt reported a prevalence of dysmenorrhea of 59.7%. [24] Of patients reporting pain, 12% described it as severe; 37%, as moderate; and 49%, as mild. Dysmenorrhea caused 14% of patients to miss school frequently. Although black adolescents reported no increased incidence of dysmenorrhea, they were absent from school more frequently (23.6%) than whites (12.3%), even after adjusting for socioeconomic status. Dysmenorrhea can disrupt personal life and is a significant public health problem associated with substantial economic loss related to work absences. Ten percent of women with the condition have severe pain that can be incapacitating. In the United States, the annual economic loss has been estimated at 600 million work hours and 2 billion dollars.

2. Need for the Study
Females spend about 35 to 40 years in reproductive phase and they have approximately 430 cycles each of about 4 to 7 days. Thus, if a female is suffering due to dysmenorrhea it can hinder her work and daily activities and reduces the quality of life so it is of utmost importance to search modalities and exercises that can help her improve her work performance. TENS has helped in the treatment of low back ache and other related problems in individuals. Research on TENS during primary dysmenorrhea has not been very significant, the purpose of this study is to find if TENS and conditioning exercises has a significant effect in reduction of pain and improving the quality of life in females with primary dysmenorrhea.

3. Materials and Methodology
A total of 40 female participants between the age of 15-24 years of (Lokmanya Tilak municipal general hospital, Sion, Mumbai, Maharashtra) were selected according to the following criteria

- Age 15-24 years
- Female participants diagnosed with primary dysmenorrhea.

Participants were excluded in case of

- Any pathological or secondary causes of secondary dysmenorrhea
- Married women

- Having gynaecological diseases
- Pelvic disorders
- Being under drug or physiotherapy treatment

4. Aims and Objectives

- **AIM:** To study the effectiveness of TENS (high frequency) and conditioning exercises on females with primary dysmenorrhea
- **Objective:** To evaluate the effect of TENS and Conditioning exercises on pain in females with primary dysmenorrhea

To evaluate the effect of TENS and Conditioning exercises on the quality of life index using MOOS menstrual distress questionnaire in females with primary dysmenorrhea.

5. Procedure

Female participants satisfying the inclusion and exclusion criteria were selected, written consent was taken from the selected subjects and randomly assigned as Following

Participants were divided into two groups each of 20 GROUP A and GROUP B respectively.

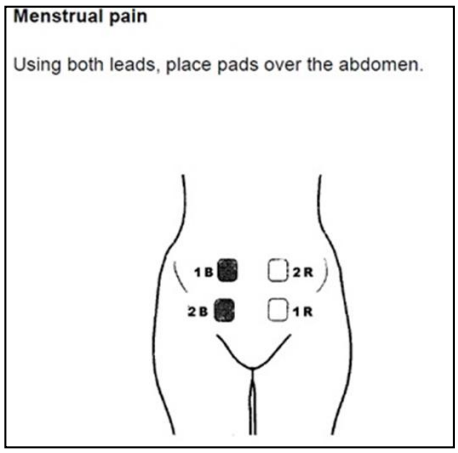
- GROUP A received TENS (during menstrual cycle) and conditioning exercises thrice a week for a period of three months.
- GROUP B received only CONDITIONING EXERCISES for thrice a week for a period of three months.

Before starting, all demographic data was collected and pain assessed using VAS scale and Quality of Life assessed using MOOS menstrual distress questionnaire.

Assessment was done prior to the treatment and after the completion of three months and interpretation of data will be done using paired T test and unpaired T test.

Pad Placement of Tens

To receive the benefits of TENS for dysmenorrhea, electrode pads must be placed in the right spaces. Doctors advise that these should be stuck around the pain, not directly on it, so that the electrical impulses cross over the cramping region in the lower back or abdomen. For larger region of pain, smaller TENS units may not be as effective. "TENS is ideal for the treatment of painful menstruation. It is non-invasive and drug-free. Pads are placed on the back, near the area of pain. TENS uses soothing pulses that are sent via the pads through the skin and along the nerve fibres. The pulses suppress pain signals to the brain and encourage the body to produce higher levels of its own natural pain killing chemicals - endorphins and encephalin.



6. Steps in Conditioning Exercises

In this phase 6 exercises are given for 25 minutes with 5 repetitions. ¬ Cool-down phase helps to slowly decrease the intensity of our activity mild exercises can be carried out for 8 minute with 2 repetitions.

Warm-up Exercise:

Step: I

Lie flat on your back. Bend both knees and place the feet flat on the ground. Now roll your bent knees to one side, roll them as far as they will easily go at the same time, carry both your arms and your head to the other side too. You are now twisting your body and stretching one set of oblique trunk muscles then bring your knees back to midline, resting your heel on the ground and your • arms by your sides. • Hold this position for 5 seconds and relax 25 seconds. Repeat for 4 times (both side)

Conditioning Exercise

Step: II

- To stand behind a chair.
- Bend trunk forward from the hip joint.
- Shoulders and back were positioned on a straight line.
- The upper body was placed parallel to the floor.
- Hold this position for 5seconds and relax 25 seconds.
- Repeat for 3 times.

Step: III

- To stand 10-20 cm behind a chair,
- Then raise 1heel off the floor.
- Repeated the exercise with the other heel alternatively.
- Hold this position for 5 seconds and relax 25 seconds.
- Repeat for 3 times

Step: IV

- To spread third feet shoulder width
- Place trunk and hands in forward stretching mode,
- Completely bend her knees
- Maintain a squatting position
- Hold this position for 5 seconds and relax 25 seconds.
- Repeat for 3 times

Step: V

- To spread her feet wider than shoulder width.
- To bend and touch left ankle with her right hand
- Putting her left hand in a stretched position above head,
- The head was in the middle head was turned and looked for her left hand.
- Repeated for the opposite foot with the same method
- Hold this position for 5 seconds and relax 25seconds.
- Repeat for 3 times

Step: VI

- To lie down in the supine position
- The shoulders, back, and feet were kept on the floor.
- The knees were bent with the help of her hands and reached to chin
- Hold this position for 5 seconds and relax 25 seconds.
- Repeat for 3 times

Step: VII

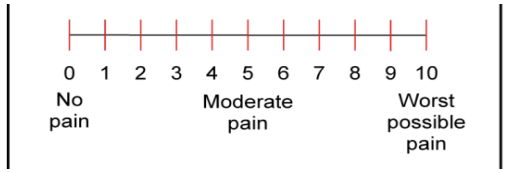
- To stand against a wall and put her hands behind
- Head and elbows pointed forward in the direction of the eyes

- Bending the vertebral column,
- Abdominal muscle wall was contracted for 10 seconds
- Hold this position for 5 seconds and relax 25 seconds.
- Repeat for 3 times

7. Material Used:

VAS Pain Scale

- A visual analogue scale (VAS) is a measurement instrument that tries to measure a characteristic or attitude that is believed to range across a continuum of values and cannot easily be directly measured.
- For example, the amount of pain that a patient feels ranges across a continuum from none to an extreme amount of pain. From a patient perspective, this spectrum appears continuous + or – their pain does not take discrete jumps as a categorization of none, mild, moderate and severe would suggest. It was to capture this of an idea of an underlying continuum that the VAS was devised.
- Operationally a VAS is an ordinal scale, using a 10-cm line divided into 10 equal sections, with 0 representing "no pain" and 10 representing "unbearable pain".
- The patient marks on the line the point they feel represents their perception of their current state before and after treatment.



8. Symptom Scales on the Moos Menstrual Distress Questionaire

Pain

Muscle stiffness
Headache
Cramps
Backache
Fatigue
General aches and pains

Concentration

Insomnia
Forgetfulness
Confusion
Accidents
Lowered motor coordination

Behavioural Change

Lowered school or work
Performance
Take naps stays in bed
Stays at home
Avoid social activities

Autonomic Reactions

Symptom Scales on the Moos Menstrual Distress Questionaire:

Pain

Muscle stiffness
Headache
Cramps
Backache
Fatigue
General aches and pains

Concentration

Insomnia
Forgetfulness
Confusion
Accidents
Lowered motor coordination
Dizziness faintness
Nausea vomiting
Hot flashes

Water Retention

Weight gain
Skin disorders
Painful breasts
Swelling

Negative Effect

Crying
Loneliness
Anxiety
Restlessness
Irritability
Mood swings
Depression
Tension

Arousal

Affectionate
Orderliness
Excitement
Bursts of energy or activity

Control

Feeling of suffocation
Chest pains
Ringing in ears
Heart pounding
Blind spots fuzzy vision
1-no reaction at all
2=Hardly noticeable
3=mild
4=moderate
5=strong
6-acute or partially disabling
Total score =48

9. Results and Table

- **Group A:** Patients Given Tens (High Frequency) and Conditioning Exercises.
- **Group B:** Patients Given Conditioning Exercise.

10. Data Analysis

Group A

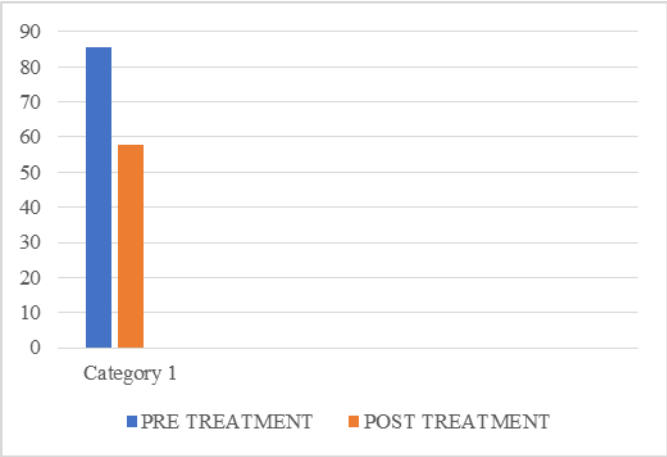
MMDQ

Treatment	Mean	Standard Deviation	P Value	T Value
Pre-treatment	85.65	3.2	0.2383	23.573
Post-treatment	57.75	4.21		

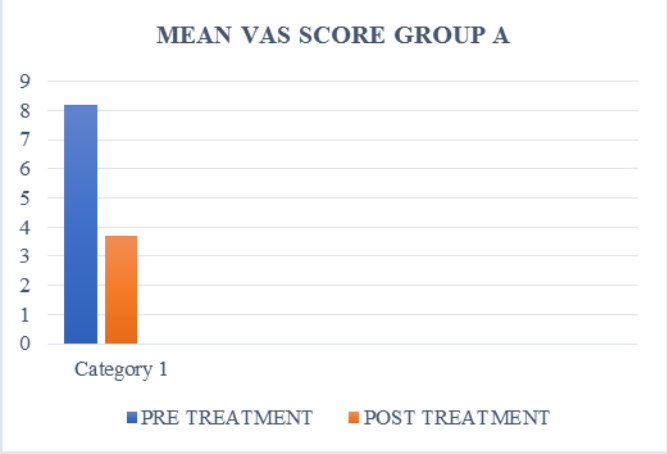
VAS

Treatment	Mean	Standard Deviation	P Value	T Value
Pre-Treatment	8.2	0.7678	0.8406	18.963
Post- Treatment	3.7	0.7327		

MMDQ SCORE GROUP A

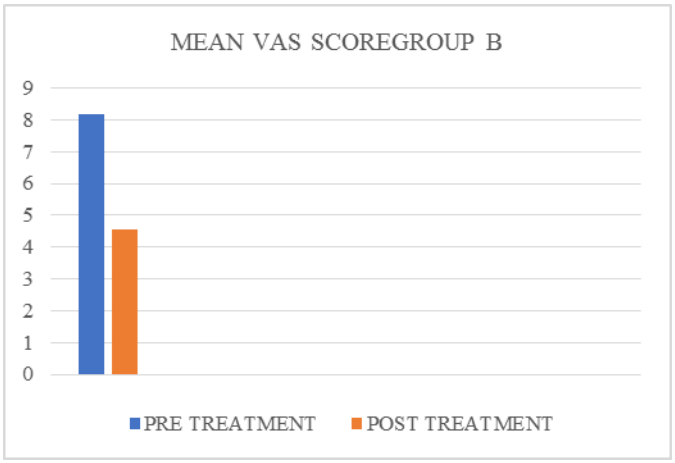


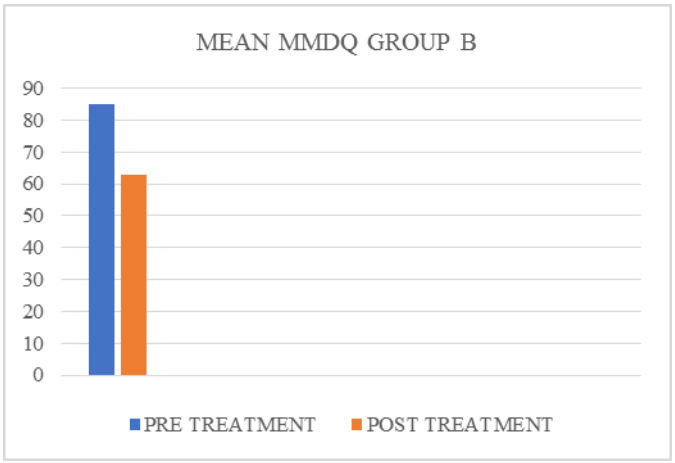
MMDQ MEAN SCORE GROUP A



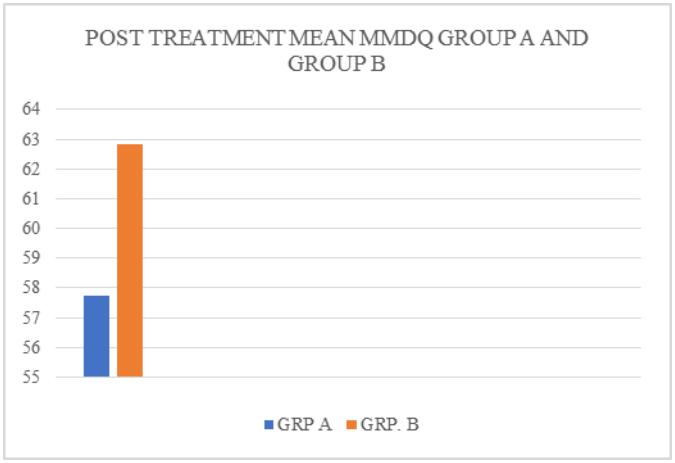
GROUP B

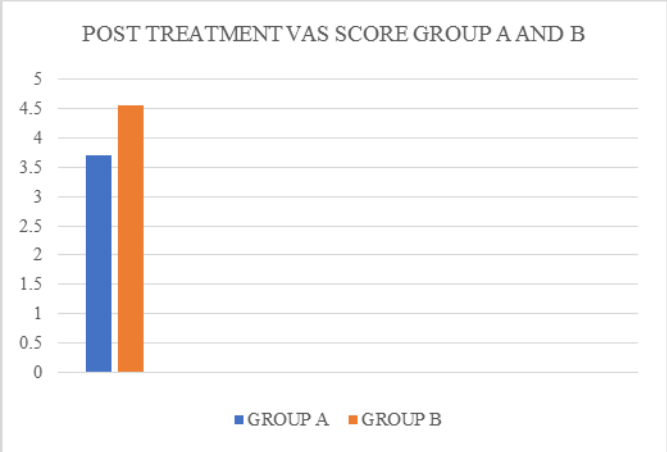
MMDQ	Mean	Standarard Deviation	P Value	T Value
PRE	84.9	2.864	0.9064	24.015
POST	62.85	2.943		
VAS			0.9527	16.701
PRE	8.2	0.6959		
POST	4.55	0.6863		





MMDQ	Mean	Standard Deviation	P Value	T Value
POST GRP.A	57.75	4.216	0.1258	4.436
POST GRP.B	62.85	2.943		
VAS				
POST GRP. A	3.7	0.7327	0.7786	3.786
POST GRP. B	4.55	0.6863		





11. Discussion

- Dysmenorrhea is defined as difficult menstrual flow or painful menstruation. Dysmenorrhea is one of the most common gynaecologic complaints in young women who present to clinicians. The optimal management of this symptom depends on an understanding of the underlying cause. Dysmenorrhea is classified as primary (spasmodic) or secondary (congestive). Primary dysmenorrhea is defined as menstrual pain not associated with macroscopic pelvic pathology (i.e. absence of pelvic disease). It typically occurs in the first few years after menarche and affects up to 50% of postpubescent females. Secondary dysmenorrhea is defined as menstrual pain resulting from anatomic and/or macroscopic pelvic pathology, such as that seen in women with endometriosis or chronic pelvic inflammatory disease. This condition is most often observed in women aged 30-45 years
- Group A MMDQ has a pre-test mean value 85.65 to post-test mean value 57.75 with t value 23.573and p value 0.2383 while in group A VAS pre-test mean value 8.2 to post-test mean value was 3.7 with t value 18.963 p value 0.8406
- Group B MMDQ has a pre-test mean value 84.9 to post-test mean value 62.85 with t value 24.015 and p value 0.9064 while in group B VAS pre-test mean value 8.2 to post-test mean value was 4.55 with t value 16.701 and p value 0.9527
- The study can help in reduction of pain and improvement in quality of life in general population, the main purpose of the study is to compare the difference in pain relief using TENS and conditioning exercises in group A and group B received only conditioning exercises and screening was done using VAS and MMDQ to test the post values of both the group 40 female participants satisfying the inclusion and exclusion criteria were between the age group of 15-25 were selected, written consent was taken from the selected subjects and randomly assigned as Following Participants were divided into two groups each of 20 group A and group B respectively. Group A received TENS (during menstrual cycle) and conditioning exercises thrice a week for a period of three months' group B received only conditioning exercises for thrice a week for a period of three months
- Before starting, all demographic data was collected and pain assessed using VAS scale and Quality of Life assessed using MOOS menstrual distress questionnaire
- Assessment and interpretation of data was done using paired 't' test.
- Our observation indicates the pain relief more in group A as compared to group B.
- The report supported the hypothesis that conditioning exercises given before and after the menstrual phase and high frequency TENS (group A) leads to more relief in pain during the menstrual cycle.

12. Conclusion

According to the study, the following conclusions can be drawn:

- Pain relief was more in group A due to the gate-control theory TENS (high frequency) and conditioning exercises then compared to patients in group B who were given only conditioning exercises.
- Finally, it can be concluded that conditioning exercises given before and after the menstrual phase and high frequency tens given is more effective in relieving pain and improving the quality of life in females with primary dysmenorrhea as compared to only conditioning exercises given during the menstrual phase.

13. Suggestions and Limitations

The study was short term study result did not show much significant changes between the two groups of patients, each group being treated with different techniques.

Sample size was very small, so further study using a large sample size could be better to compare the effectiveness of treatment

14. Acknowledgement

Indeed, I am very glad to present this project as a part of my internship, I wish to express my sincere gratitude to all those who really helped me with it.

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I would like to bow to THE ALMIGHTY and OUR PARENTS and ALL FAMILY MEMBERS whose blessings, love and encouragement has always been a catalyst in all walks of our life.

15. References

1. http://emedicine.medscape.com/article/253812-overview
2. Medline Plus. Painful menstrual periods Update Date: 9/2/2009 by: Susan Storck. Also reviewed by David Zieve
3. http://www.medicinenet.com/premenstrual_syndrome_pictures_slideshow/article.htm
4. French L *et al*. Dysmenorrhea in adolescents: diagnosis and treatment. *Paediatr Drugs*. 2009(1):1-7.
5. Hilário SG, Bozzini N, Borsari R, Baracat EC. Action of aromatase inhibitor for treatment of uterine leiomyoma in peri menopausal patients, Fertil. Steril, 2008; (1):240-3.

6. Nab Eshima H, Murakami T, Nishimoto M, Sugawara N, Sato N. Successful total laparoscopic cystic Adenomyomectomy after unsuccessful open surgery using trans trocar ultra-sonographic guiding. J Minim Invasive Gynecol. 2008; (2):227-30.
7. Hacker, Neville F, George Moore J, Joseph C Gambone. Essentials of Obstetrics and Gynaecology, 4th ed. Elsevier Saunders, 2004.
8. Hubacher D, Reyes V, Lillo S *et al*. Preventing copper intrauterine device removals due to side effects among first-time users: randomized trial to study the effect of prophylactic ibuprofen. Hum. Reprod. 2006; (6):1467-72.
9. Johnson BA. Insertion and removal of intrauterine devices. Am Fam Physician. 2005; (1):95-102.
10. Cho S, Nam A, Kim H, *et al*. Clinical effects of the levonorgestrel-releasing intrauterine device in patients with adenomyosis. Am. J. Obstet. Gynecol. 2008, 198.
11. www.iosrjournals.org.
12. Larchmt. Exercise and premenstrual symptomatology: a comprehensive revie*w*. 2009; 18(6):895-9.