



Research Article

EFFECTIVENESS OF KNEE CHEST POSITION WITH INTERFERENTIAL THERAPY AND INTERFERENTIAL THERAPY ALONE IN REDUCING PAIN ON FEMALE STUDENTS WITH PRIMARY DYSMENORRHEA

Yuvarani.G^{1*}, Kamatchi. K², Tharani. G³, Muthulakshmi. K⁴ and Sweetly. R⁵

^{1,2,3} Faculty of Physiotherapy, Dr.MGR Educational & Research Institute University, Chennai, Tamil Nadu, India

⁴Physiotherapist, Brain Tree Therapies, Chennai, Tamil Nadu, India.

⁵Faculty of Physiotherapy, Dr.MGR Educational & Research Institute University, Chennai, Tamil Nadu, India

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ABSTRACT

Aim: The aim of the study is to determine whether the knee chest position with interferential therapy and interferential therapy alone helps in reducing the severity and duration of primary dysmenorrhea in college going female students. Menstruation is a periodic and temporary genital bleeding, which is defined as cyclic uterine hemorrhage dependent on endometrial disintegration. The first period usually begins between 12 and 15 years of age, a point in time known as menarche. The length of menstrual cycle varies from woman to woman, the average days between the menstrual cycle is about 24 to 35 days. Dysmenorrhea is one of the most prevalent gynecological problems among adolescents and young adults, associated with menstruation. The prevalence of Primary dysmenorrhea is about approximately 50% to 70% of women and 10% of them are sufficiently intense to interfere with daily life. Physiotherapy reduces pain and promotes better quality of life by means of some analgesic modalities, such as electrotherapy, therapeutic exercises and massage. This study reveals whether the interferential therapy with knee chest position and interferential therapy alone improves the quality of life of the females with primary dysmenorrhea.

Background of the Study: The main objective of this study was to determine the effect of knee chest position and interferential therapy on primary dysmenorrhea.

Methodology: The experimental study was conducted at ACS Medical College and Hospital for twelve weeks (3 days per week). As per the selection criteria, 30 subjects with Dysmenorrhea were grouped as Group A and Group B with 15 subjects. An informed consent was obtained from the subjects and a detailed demographic assessment chart was documented. Before the commencement of the treatment, the procedure was explained to all the subjects. MOOS menstrual distress questionnaire (MMDQ), visual analogue scale (VAS) was given to the subjects before and at end of the treatment. Both the groups received the Interferential therapy for 15 minutes, Frequency 90-130Hz, Spectrum: 20-50Hz. After the interferential therapy session Group B received Knee to Chest position.

Result: The data analysis of this study has shown that Interferential therapy along with Knee chest position is more effective in reducing pain and improving the quality of life than Interferential therapy alone.

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INTRODUCTION

Menstruation is a periodic and temporary genital bleeding, which is defined as cyclic uterine hemorrhage dependent on endometrial disintegration. The first period usually begins

*Corresponding author: Yuvarani.G

Faculty of Physiotherapy, Dr.MGR Educational & Research Institute University, Chennai, Tamil Nadu, India

between 12 and 15 years of age, a point in time known as menarche. The length of menstrual cycle varies from woman to woman, the average days between the menstrual cycle is about 24 to 35 days. Dysmenorrhea is one of the most prevalent gynecological problems among adolescents and young adults, associated with menstruation. It is characterized by lack of visible structural abnormality or any gynecological pelvic disease. The prevalence of Primary dysmenorrhea is about approximately 45% to 95% of women have dysmenorrhea symptoms and 10% of them are sufficiently

intense to interfere with daily life². Primary dysmenorrhea is related with restriction of activity and absence from schools, college and workplace⁵ Primary dysmenorrhea is a sharp pelvic cramp at the first day of menstrual flow¹. It is commonly caused by some of the following reasons: Hypersecretion of prostaglandins, which derived from cyclooxygenase-2. Prostaglandin is a hormone which is responsible for uterus contraction during childbirth and menstruation. The pain occurs when the uterus contracts with insufficient blood supply to the endometrium lining. When the prostaglandin secretions increase in the endometrium after a fall in progesterone level in late luteal phase, it results in increased myometrial tone and excessive uterine contraction.

Many therapies are proposed to treat Primary dysmenorrhea includes NSAIDS, oral contraceptives, vitamins. A different treatment approach is the physical activity which improves pelvic and extra pelvic functioning, thus promoting a phenomenon known as analgesia by physical exercise which by means of endogenous mechanism and endogenous opioids release, raises pain threshold.

Physiotherapy reduces pain and promotes better quality of life by means of some analgesic modalities, such as electrotherapy, therapeutic exercises and massage. This study reveals whether the interferential therapy with knee chest position and interferential therapy alone improves the quality of life of the females with primary dysmenorrhea¹.

METHODOLOGY

30 out of 45 females were selected, with the approval from the Institutional review board. The selection were based on the Inclusion criteria Female college students aged between 18 to 25 years, Subjects with regular menstrual cycle, Subjects with complaint of primary dysmenorrhea. Non cooperative people, Subjects under medications (painkillers or others), Subjects with inter menstrual bleeding, Subjects with urinary tract infection were excluded from the study. This study was carried out at Faculty of Physiotherapy and Outpatient Physiotherapy department in ACS Medical College and Hospital. The experimental study was conducted for twelve weeks (3 days per week). As per the selection criteria, 30 subjects with Dysmenorrhea were grouped as Group A and Group B with 15 subjects. An informed consent form was obtained from the subjects and a detailed demographic assessment chart was filled which includes Name, age, duration of symptoms, age of puberty, menstrual cycle history was collected. Before the commencement of the treatment, the procedure was explained to all the subjects. MOOS menstrual distress questionnaire (MMDQ), visual analogue scale (VAS) was given to the subjects before the first session of the treatment. The subject is in supine lying position and the pad electrodes are placed in the supra pubic region. Both the groups received the Interferential therapy for 15 minutes, Frequency 90-130Hz, Spectrum: 20-50Hz. After the interferential therapy session Group B received Knee to Chest position³. The subjects were asked to maintain and hold this position for five minutes with ten repetition in each leg. A rest period of ten seconds was given after each repetition. After the treatment session the subject were asked to fill the post assessment form that contain VAS and MOOS menstrual distress questionnaires.

Data Analysis

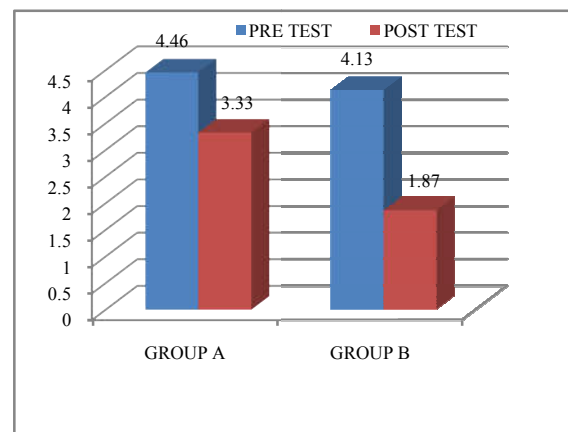
The collected data was tabulated and analyzed using inferential statistics. Mean and standard deviation used to assess all the parameters. Paired t-test and independent t-test was adopted. Paired t-test was used to find out the significant difference in improvement between pre and post treatment values for Visual analogue scale, MOOS menstrual distress questionnaires within the group. The student independent t-test is used to compare the difference between the Group A and Group B.

Table 1 Comparison of vas score between Group a and group b in pre and post test

VAS	Group a		Group b		t-test	Significance
	Mean	SD	Mean	SD		
Pre test	4.46	1.55	4.13	0.74	0.75	0.459
Post test	3.33	1.29	1.87	0.74	3.81	.001

(***p<0.001)

The above table reveals the Mean, Standard deviation (S.D), t-value and p-value of the VAS scale between pre-test and Post-test of Group A and Group B. This table shows that there is less significant difference between the pre-test mean value of Group A (4.46) and Group B (4.13). This table shows that there is a significant difference between the post test mean value of Group A (3.33) and group B (1.87).



Graph-1 Comparison of VAS score between Group A and Group B in pre and post test

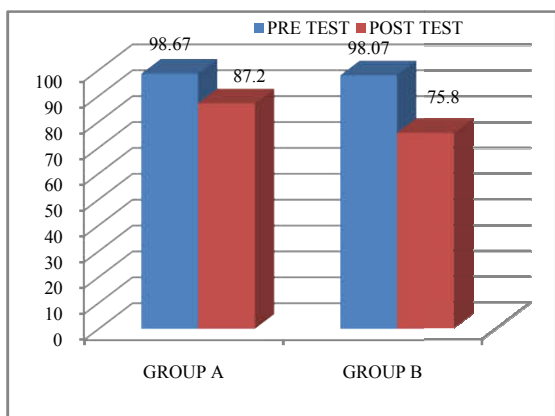
Table 2 Comparison of MOOS questionnaire score between Group A and Group B in pre and post test

MOOS Questionnaire	Group A		Group B		T-test	Significance
	Mean	SD	Mean	SD		
Pre test	98.67	12.03	98.07	13.50	0.12	0.899
Post test	87.20	11.65	75.80	13.49	2.47	0.00

(***p<0.001)

The above table reveals the Mean, Standard deviation (S.D), t-value and p-value of the MOOS menstrual distress questionnaire score between pre-test and Post-test of Group A and Group B. This table shows that there is less significant difference between the pre-test mean value of Group A (98.67) and Group B (98.07). This table shows that there is a significant difference between the post test mean value of Group A (87.20) and group B (75.80).

Effectiveness of Knee Chest Position With Interferential Therapy And Interferential Therapy Alone In Reducing Pain On Female Students With Primary Dysmenorrhea

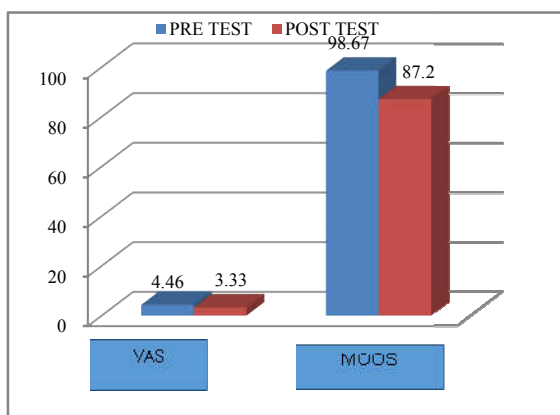


Graph 2 Comparison of moos menstrual distress questionnaire score between Group-A and GROUP-B in pre and post test

Table 3 Comparison of VAS and moos menstrual distress questionnaire score within Group-A between pre and post test

Group a	Pre test		Post test		t-test	Significance
	Mean	SD	Mean	SD		
VAS	4.46	1.55	3.33	1.29	12.47	0.00
MOOS menstrual distress Questionnaire	98.67	12.03	87.20	11.65	11.10	0.00

The above table reveals the Mean, Standard deviation (S.D), t-value and p-value of the Visual analogue scale and MOOS menstrual distress questionnaire score between pre-test and Post-test values of Group A. In the Visual analogue scale score, there is a significant difference between the pre-test mean value of (4.46) and post-test mean value(3.33). In the MOOS menstrual distress questionnaire, there is a significant difference in pre-test mean value (98.67) and post-test mean value (87.20).



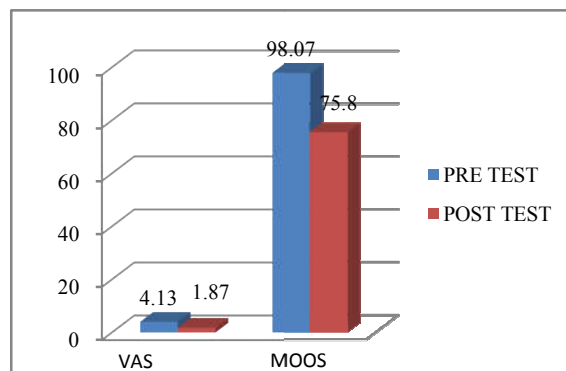
Graph 3 Comparison of VAS and MOOS menstrual distress questionnaire score within Group-A between pre and post test

Table 4 Comparison of VAS and MOOS questionnaire score Within Group - B between pre and post test

Group B	pre test		post test		t-test	significance
	Mean	SD	Mean	SD		
VAS	4.13	0.74	1.87	0.74	10.99	0.00
MOOS Questionnaire	98.07	13.50	75.80	13.49	13.03	0.00

The above table reveals the Mean, Standard deviation (S.D), t-value and p-value of the Visual analogue scale and MOOS menstrual distress questionnaire score between pre-test and

Post-test values of Group B. In the Visual analogue scale score, there is a significant difference between the pre-test mean value of (4.13) and post-test mean value (1.87). In the MOOS menstrual distress questionnaire, there is a significant difference in pre-test mean value (98.07) and post-test mean value (75.80).



Graph 4 Comparison of visual analogue scale and moos menstrual distress questionnaire within Group B between pre and post test

RESULT

On comparing Mean values of Group A and Group B on VAS scale score shows significant improvement in the post test mean but [Group A] shows [3.33] at p 0.001. On comparing Mean value of Group A and Group B on MOOS Menstrual Distress Questionnaire score shows significant reduction in the post test means but [Group B] shows [75.80] lower mean value is more effective than [Group A] shows [87.20] at p 0.001. Hence the null hypothesis is rejected. Between group analysis using Independent 't' test at p=0.001 showed significant difference between groups A & B and the null hypothesis is rejected.

DISCUSSION

This study was done to find out the effectiveness of knee chest position with interferential therapy and interferential therapy alone on primary dysmenorrhea in college going female students. 30 female students aged between, 18 to 25 year with primary dysmenorrhea were selected from faculty of physiotherapy Dr.MGR educational and research Institute University. Students were randomly allocated into group A (15) and group B (15) after obtaining an informed consent from each participants. Group A were treated with Interferential therapy alone and Group B were treated with Interferential therapy along with knee chest position. Both Group A and Group B showed significant improvement in reducing pain and improves quality of life of an individual. But Group B showed better improvement as compared with Group A. Subjects in this study have similar baseline values of all dependent variables suggesting that both groups had similar distribution of patients. Statistical analysis reveals that there is a significant change in baseline values. Kannan P *et al* 2014 had concluded in their study that Physiotherapists could consider using heat, transcutaneous electrical nerve stimulation, and yoga in the management of primary dysmenorrhea⁶. Kristina S Gamit *et al* 2014 in their study has concluded that Stretching Exercises are effective in reducing pain in young females with primary dysmenorrhea⁷. This study has proved that physiotherapy is effective in reducing pain. Rajalaxmi V *et al* 2016 in their study "A study to

analyse the effectiveness of core strengthening exercises and stretching program for young female physiotherapy students with Primary dysmenorrhea has concluded that the stretching exercise are more effective in reducing the dysmenorrheal pain and to improve the quality of life of the women when compared to core strengthening exercises in female Physiotherapy students with primary dysmenorrhea⁸. The data's of this present study has supported alternative hypothesis that Interferential therapy along with knee chest position is effective in reducing pain in females with primary dysmenorrhea⁴. This study also recommends that large sample size could have been used. The duration of the study may be increased. Any modality other than interferential therapy can be used.

CONCLUSION

The present study concluded that Interferential therapy along with knee chest position in more effective than Interferential therapy alone in reducing pain and improving quality of life in subjects with primary dysmenorrhea. Physiotherapy is more effective in reducing pain and improving the quality of life thereby reducing the sickness absenteeism due to primary dysmenorrhea. Hence this study strongly recommends physiotherapy as a better choice of treatment. Ethical Consideration: This study was conducted after obtaining the approval from the Institutional Review Board of faculty of Physiotherapy.

Conflict of Interest: None

Fund: Self funded project

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