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Research Article

COMPARISION OF ISOMETRIC EXERCISE VS STRETCHING EXERCISE IN PRIMARY DYSMENNORHEA

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ABSTRACT

Dysmenorrhea is the most prevalent periodical pain and it is also known as painful periods. Aim of study was to compare isometric exercise vs stretching exercise in primary dysmennorhea. Total 60 male adult females were taken who suffers from dysmennorhea they were divided into to groups isometric group and stretching group pre intervention and post intervention for VAS and anxiety was taken. For isometrics pre intervention for anxiety was (n=30, mean56.4±4.34) VAS (n=30, mean7.4, ±1.379) there was a significant difference in post intervention for anxiety was (n=30, mean52.06±4.37) and for VAS (n=30, mean 5.5±1.737). For stretching pre intervention for anxiety was (mean57.06 ±11.07) VAS (N=7.82±1.33) There was a significant difference in post intervention. for anxiety (n=57.06±11.07) for VAS (n=5.4±1.38) Between group comparisons using unpaired t test showed significant difference: anxiety post isometrics and stretching P value which is significant at p>0.05 pre stretching and post stretching according to anxiety p value is 0. oooo33 which is significant as p > 0.05 to visual analogy scale for Post isometrics and post stretching P value is 0.434949 the result is not significant at p>0.05. Stretching is better than isometrics to reduce pain isometrics are better than stretching to reduce anxiety. The study concluded that isometrics was better than stretching to reduce pain and stretching was better than isometrics to reduce anxiety in primary dysmenorrhea.

INTRODUCTION

Dysmenorrhea is the most prevalent periodical pelvic pain and it is also known as painful periods [(1).] It usually begins around the time menstruation begin approximately, 20-90% of women suffer from this problem during their reproductive age [(2).] The main cause of dysmenorrhea is unknown; however, increased amount of prostaglandins is the most important known cause of this disorder It is more common among those with heavy periods , irregular whose periods started before 12 years of age. [(3,4)] Primary dysmenorrhea is not life-threatening and does not cause disabilities but it leads to absenteeism and significantly affects the quality of life [(5)].

Dysmenorrhea can be treated through pharmacological and non-pharmacological methods. Pharmacotherapy includes using Oral Contraceptive Pills (OCP), Non-Steroidal Anti-Inflammatory Drugs (NSAIDs), and analgesic tablets which reduce menstrual pain by affecting the level of prostaglandins On the other hand, complementary and alternative medicine include essential fatty acid, vitamins, supplements, (TENS), acupuncture, reflexology acupressure massage therapy, and exercises. [(6,7,8)]

Primary dysmenorrhea usually present in adult, within three years of menarche. It start within the first six months after menarche. Affected young women experience sharp, intermittent spasms of pain, usually in the suprapubic area. Pain may radiate to the back of the legs or the lower back. Pain usually develops within hours of the start of menstruation and peaks as the flow becomes heaviest during the first day or two of the cycle. Some women notice that painful periods disappear after having their first child. This could be due to the stretching of the opening of The uterus or the fact that birth improves the uterine blood supply and muscle activity. During the recent 20-30 years, regular exercise and physical activities have been introduced as effective methods for prevention and treatment of dysmenorrhea Females also suffer from anxiety [(9)] Exercising affects the levels of steroid hormones in blood circulation of the women in reproductive ages. [(10).] Since stress can increase the activity of the sympathetic system leading to increased uterine muscle contraction, it can increase th symptoms of pre-menstruation syndrome (PMS) ([11,12).] Exercise can thus reduce the activity of the sympathetic system, resulting in a decrease of dysmenorrheasymptoms [(13)] Although it appears that doing

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exercise can relieve the pain associated with dysmenorrhea, some observational studies in this area have provided some Stretching as it relates to physical health and fitness, is the process of placing particular parts of a Body into a position that will lentheng and elongate the muscles and associated soft tissue. Upon undertaking a regular stretching program, a number of changes program begin to occur within the body and specifically within the muscles themselves. Other tissues that begin to adapt to the stretching process include e fascia, tendon, ligament, skin and scar tissue

Aim and Objectives

Aim

To Compare Isometric Exercise Vs Stretching Exercise in Primary Dysmenorrhea

Objective

To study the effect of isometrics exercises on pain and anxiety in primary Dysmenorrhoea.
To study the effect of stretching exercises on pain and anxiety in primary Dysmenorrhoea.
To compare the effect of isometrics, exercise vs stretching on pain and anxiety in primary Dysmenorrhoea

MATERIALS AND METHODOLOGY

Source of data: Study will be conducted in Tilak Maharashtra Vidyapeth

Study population: Female Students between 18 to 30 years old.
Study duration: 2 months (2 menstrual cycles)
Sample design: Experimental study.
Sample size: 60

Materials required

1. Pen
2. Paper
3. Visual analogue scale
4. Zung anxiety questionnaire
5. Outcome measures:

1. Visual analogue, scale.
2. Zung anxiety questionnaire

Inclusion

1. Single
2. Age between 18 -30yrs
3. No history of mental and physical disease
4. Having no history bone disease that decrease the ability of exercise
5. No professional athlete
6. Not suffering from pelvic diseases, ovary cyst and endometriosis

Exclusion

1. Being absent for more than 2 session of exercise
2. No occurrence of any unexpected events
3. Not willing to participate in the study.

Outcome Measures

1. Visual analog scale
2. Zung anxiety questioner

Procedure

Initially, Synopsis was presented and approval from ethical committee was obtained college were approached and permission for data collection was taken. Total 60 adult females suffering from dysmennorhea patients satisfying inclusion and exclusion criteria were recruited. Prior to participation, subjects were informed about study protocol and written informed consent was taken from all subjects. These subjects were randomly divided into two groups, Isometric group (Group A, n= 30) stretching (Group B, n=30) Baseline evaluation was done using zung anxiety questionere and visual analog scale

Group (A)

Isometrics exercises will be given The intervention group students were required to perform isometric exercises since the 1st day of their menstrual cycle 5 days a week, two sessions a day, and 10 times per session for 8 weeks. The exercises in this study included 7 stages which were modified and confirmed by a specialized rehabilitation consultant. Dosage -5second hold, 5 repetation the protocol of isometric exercises was as follows:

1. Sleeping in supine position, extending feet next to each other, pressing feet on each other, holding for 5 second, and relaxing.
2. Sleeping in supine position, putting feet crossed and pressing them on each other, holding for 5s, and relaxing.
3. Sleeping in supine position, bending knees and thighs, putting a pillow between two knees, pressing knees to each other, holding for 5s, and relaxing.
4. Going back to the third position, putting hand below waist and pressing waist to the ground, holding for 5s, and relaxing.
5. Sleeping in supine position, bending knees and thighs and trying to raise head and neck above the ground level, holding for 5s, and relaxing.
6. Sleeping in supine position, bending knees and thighs and trying to move head and neck toward the right thigh, holding for 5s, and relaxing. Repeating stage 6 toward the left thigh.

Taking one abdominal deep breath among above-mentioned movements (sleeping in supine position with bent knees and thighs and breathing through nose in a way that abdomen expand hand can also be placed on abdomen to ensure abdominal breath. Then, exhaling from mouth such a way that abdominal muscles stick to waist).

Group (B)

In the stretching exercise group, the participants were asked to do 4 stretching exercises in abdomen, pelvis, and groin that were performed 3 days a week for two menstrual cycles (17). Each exercise started with 10 second in the first session and 1 second was added to it every session. Besides, each movement was repeated for 5 times. Stretching exercises were taught to the participants and asked to perform home exercise program and regularly follow up was done. They were asked to avoid performing stretching exercise during the period cycle The prescribed exercise was as follow:

The firsts stretching exercise: The subject was asked to stand and bend the trunk forward from the hip joint so that the shoulder and back were positioned on straight line and the upper body was placed parallel to the floor for 5sec repetition 10 times

Second stretching exercise: subject was requested to stand then raise 1 heel off the floor, then repeat the exercise with other heel alternatively. The exercise was performed 20 times

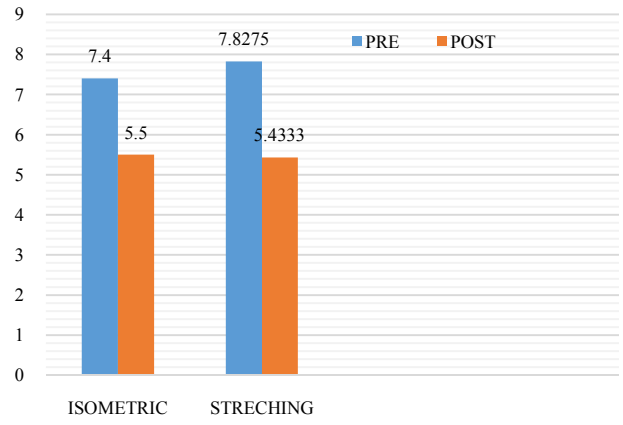
Third stretching exercise: The subject was asked to spread the feet shoulder width, place trunk and hands forward stretching mode, and completely bend their knees and maintain a squatting position, duration of this position was 5sec, the subjects than raised her body and repeated the same movement 10 times

Fourth stretching exercise: The subject was asked to spread the feet shoulder width then the subject was asked to bend and touch left ankle with her right hand and left ankle with her right hand while putting her left hand in a stretch position above her head so that her head was in the middle and her head was turned and looked for her left hand, this exercise was repeated for the opposite foot with the same method The exercise was repeated for 10 times for each side of the body

RESULTS

Statistical analysis was done using unpaired t test. Between group comparisons using unpaired t test showed significant difference in isometric exercise and stretching 0.05). 1for pre and post isometric and stretching according to visual analogue scale P value which is p>o.000033 which is significant at p>0.05:according to anxiety post isometrics and stretching P value which is significant at p>0.05pre stretching and post stretching according to anxiety p value is 0. oooo33 which is significant as p > 0.05 to visual analogy scale for Post isometrics and post stretchingP value is 0.434949 the result is not significant at p>0.05stretching is better than isometrics to reduce pain isometrics are better than stretching to reduce anxiety

VISUAL ANALOG SCALE – GRAPH 1

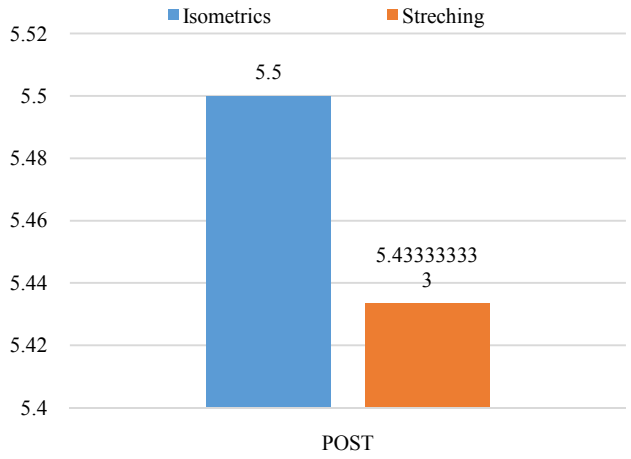


	Isometrics	Stretching
Pre	7.4±1.379	7.82±1.33
Post	5.5±1.737	5.4±1.38
P value	p>0.05	p>0.000033

Interpretation: as shown in the graph 1 according to visual analogue scale

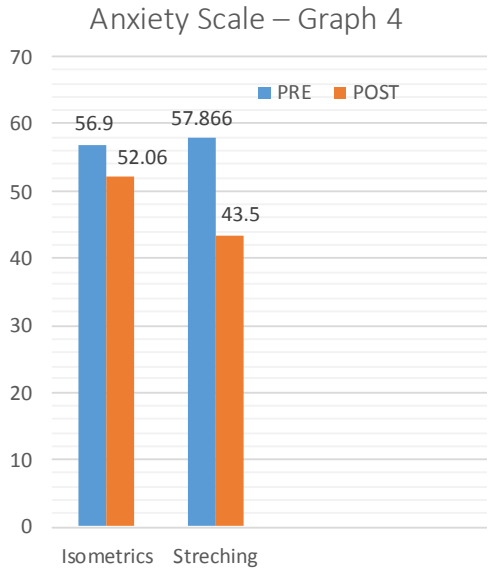
P value which is p>o.000033 which is significant at p>0.05

Visual Analog Scale – Graph 2



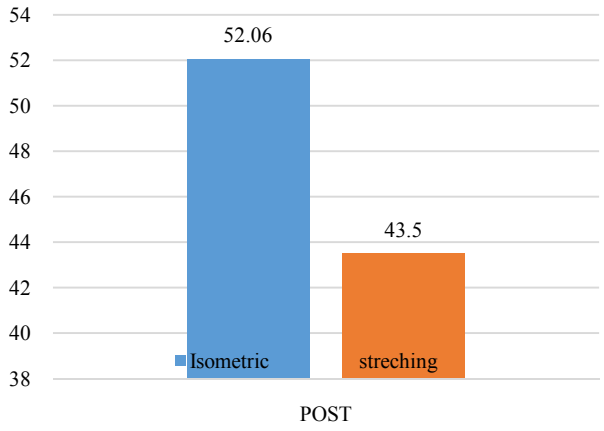
	Isometrics	Stretching
Post	5.5±1.737	5.4±1.38
P value	p>0.434949	

Interpretation: as shown in graph 2 according to visual analogy scale for Post isometrics and post stretching p value is 0.434949 the result Is not significant at p>0.05



	Isometrics	Stretching
Post	52.06±1.737	43.5±1.38
P value	p>0.05	

ANXIETY SCALE – GRAPH 3



Anxiety		
	Isometrics	Stretching
Pre	56.4±4.34	57.06±11.07
Post	52.06±4.37	43.5±11.04
P value	p>0.05	

Interpretation: As the graph shows according to the anxiety for pre isometrics and post isometrics and pre stretching and post stretching p value is 0. oooo33 which is significant as p > 0.05

DISCUSSION

The result of pre and post comparison of VAS and anxiety scale of both isometric and stretching protocol shows the significant difference in the P values. Its shows that both the methods are useful for treating dysmenorrhoea and anxiety. Though stretching shows significant improvement on outcome measures, performing the stretching exercises whereas isometric exercises have been observed to relive the pain immediately.

As shown in the graph 1for pre and post isometric and stretching according to visual analogue scale P value which is p>o.000033 which is significant at p>0.05

As shown in graph 4 according to anxiety post isometrics and stretching P value which is significant at p>0.05

As the graph shows for pre stretching and post stretching according to anxiety p value is 0. oooo33 which is significant as p > 0.05

As shown in graph 2 according to visual analogy scale for Post isometrics and post stretching P value is 0.434949 the result is not significant at p>0.05

As shown is graph stretching is better than isometrics to reduce pain As shown in the graph isometrics are better than stretching to reduce anxiety In the previous study Noorbakhsh *et al*.2012 reported that doing 8 weeks of physical activity significantly decreased drug consumed, amount of duration of bleeding and intensity of pain in student with primary dysmenorrhea. The present study finding were in agreement with this studies. The potential mechanism of the effect of isometric exercises is strengthening pelvic muscles, facilitating bleeding, and excretion of waste containing prostaglandin which causes contraction. The prevalence of anxiety among individuals with dysmenorrhea was reported to be 36%. Doing exercise as a factor may reduce stress and endorphin changes. Besides, findings of the study by Field *et al*. (2011) indicated that yoga reduced pre- natal and prematurity depression Broman-Fulks *et al*. (2004) showed that both high intensity and low intensity aerobic exercises reduced anxiety with high intensity exercises being more effective. Estrogen, progesterone and serotonin plays an important role throughout the menstrual cycle. Anxiety, stress and ability to perform exercises are greatly dependent on the balance of these hormones. The difference between the present study and other researches might be due to the short period of the study. Therefore, further long-term studies are required to be conducted on the issue in order to determine the effect of doing exercises on anxiety levels and menstrual bleeding.

CONCLUSION

According to the results of this study isometrics was better than stretching to reduce pain and stretching was better than isometrics to reduce anxiety in primary dysmenorrhea.

Limitations and Scope of Study

1. Low sample size
2. Wide age group

Future Scope

1. High intensity exercise
2. Low sample size
3. Wide age group
4. Menarche age group

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