



AN EXPERIMENTAL STUDY ON STRETCHING EXERCISE VERSUS YOGA POSTURE ON YOUNG FEMALE ADULTS WITH PRIMARY DYSMENORRHOEA

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ABSTRACT

Dysmenorrhoea is a painful/ cramping sensation in the lower abdomen often accompanied by other biological symptoms including dizziness, fatigue, sweating, backache, headache, nausea, vomiting, and diarrhea all occurring just before or during the menstruation. Now a days, dysmenorrhoea is the 75% of common gynecological problem found in young adults. In order to reduce the menstrual pain and symptoms in primary dysmenorrhoea through yoga postures and stretching exercise. Methods and Materials: Total 30 members were taken for the study. Inclusion criteria age 18-22 years and pain for atleast 2-3 days for post 2 month. and exclusion criteria irregular menstrual cycle and polycystic ovarian diseases and outcome measure Moos Menstrual Distress Questionnaire and Numerical Pain Rating scale. RESULT: As a result group A (stretching exercise) pre- mean value of MMDQ was (47.87) and by NPRS pre- mean value was (6.07) and the post value of MMDQ was (30.73) and NPRS was (2.67). The p-value of group A was 0.0025. group B(yoga) pre-mean value of MMDQ was (47.60) and NPRS value was (6.20) and the post mean value was (21.93) and NPRS value was (2.27). The p-value of group B was 0.0001.

KEY WORDS

Primary Dysmenorrhoea, Stretching Exercises, Yoga Postures, Moos Menstrual Distress Questionnaire, Numerical Pain Rating Scale.

INTRODUCTION

Dysmenorrhea is derived from a Greek word meno (month) and rheas (flow) which means difficult menstrual flow^[1]. Dysmenorrhea is a painful/ cramping sensation in the lower abdomen often accompanied by other biological symptoms including dizziness, fatigue, sweating, backache, headache, nausea, vomiting, and diarrhea all occurring just before or during the menstruation^[5]. Adolescence is the transitional phase of physical and mental development between childhood and adulthood. The most striking changes in the adolescent girls are the onset of menarche. Menarche signals the start of women's reproductive life and is

determined by environmental and genetic factors. After menarche, common menstrual abnormalities that the female adolescent may encounter include dysmenorrhea, irregularities in menstrual flow and premenstrual symptoms. 75% of girls experience some problems associated with menstruation^[2]. Dysmenorrhea is the most common gynecological disorder in women of reproductive age^[3]. Menstruation is a periodic and temporary genital bleeding, lasting from menarche to menopause¹. In addition, it is characteristic of primates and is defined as cyclic uterine hemorrhage dependent on endometrial disintegration and exfoliation, which occurs approximately in a normal

cycle of 21 to 45 days, with 2 to 6 days of flow and mean blood loss of 20 to 60mL, in general lasting 40 years^[4].

About 40% of women complain of dysmenorrhea among whom 10% are unable to do daily activities between one to three days per month. Dysmenorrhea may have negative effects on daily activities and function of women in and out of the home and may deteriorate their living. The data on a research on prevalence of primary dysmenorrhea in different parts of the world from 1981- 2006 showed the increasing prevalence of dysmenorrhea. The results of studies in different parts of Iran hewed the prevalence of primary dysmenorrhea in female students to be 85.5% in Rafsanjan, 71% in Tehran and 73.2% in Gilan]. This prevalence in other parts of the world was 40.7% in Delhi, 14% in Gambia], 73% in the USA, 42.2% in Thailand, 58% in Nigeria and 52.2% in Mexico City^[7].

Dysmenorrhea may be categorized into two distinct types: primary and secondary. Primary dysmenorrhea is defined as painful menses in women with normal pelvic anatomy, usually beginning during adolescence. The onset of primary dysmenorrhea is usually 6 to 12 months after menarche, which coincides with the occurrence of regular ovulatory cycles. Secondary dysmenorrhea is menstrual pain associated with underlying pathology, and its onset may be years after menarche. It can be caused by any of a dozen or so disorders such as endometriosis, pelvic inflammatory disease, intra-uterine devices, irregular cycles or infertility problems, ovarian cysts, adenomyosis, uterine myomas or polyps, intra-uterine adhesions, or cervical stenosis^[3].

The etiology of primary dysmenorrhea is not precisely understood, but most symptoms can be explained by the action of uterine prostaglandins, 3 particularly PGF₂-alfa. Elevated prostaglandin levels were found in the endometrial fluid of women with dysmenorrhea and correlated well with the degree of pain. The increase in prostaglandins in the endometrium following the fall in progesterone in the late luteal phase results in increased myometrial tone and excessive uterine contraction. The identified risk factors for dysmenorrhea include teenage, nulliparity, heavy menstrual flow, smoking, upper socioeconomic status; attempts to lose weight, physical inactivity, disruption of social networks, depression and anxiety^[10].

In primary dysmenorrhea pain begins few hours before or after the onset of menstruation and lasts for 24-48

hours. The pain is more in the first day and rarely continues to next day. Incidence of primary dysmenorrhea was reported to be between 50% and 90% in different Societies [9]. Primary dysmenorrhea is not life-threatening and does not cause disabilities, but it leads to absenteeism and significantly affects the quality of life^[11]. Clinical features Dysmenorrhea or painful menstruation is defined as a severe, painful, cramping sensation Dysmenorrhea is characterized by crampy pelvic pain beginning shortly before or at the onset of menses in the lower abdomen usually concentrated in the supra pubic area and lasting 1–3 days all occurring just before or during the menses. Pain may radiate to the back of the legs or the lower back. Systemic symptoms of nausea, vomiting, diarrhea, fatigue, mild fever and headache or light headedness are fairly common in the lower abdomen Pain usually develops within hours of the start of the menstruation and peaks as the flow becomes heaviest during the first day or two of the cycle^[12].

Physical exercise has been suggested as a non-medical approach for the management of symptoms. Despite the widespread belief that exercise can reduce dysmenorrhea, evidence-based studies are limited. Several observational studies reported that physical exercise was associated with a reduced prevalence of dysmenorrhea, although numerous other studies found no significant association between outcomes. Evidence from controlled trials suggests that exercise can reduce dysmenorrhea and associated symptoms^[13]. Exercise can be defined as an activity that requires physical exertion, especially when performed to develop or maintain fitness. Physical exercise has been suggested as a non-medical approach for the management of symptoms. The idea that various type of active or passive exercise might help in alleviating pain in primary dysmenorrhea is not a new issue. It is widely thought that exercise reduces the frequency and/or the severity of dysmenorrheal syndrome^[11].

The term yoga comes from a Sanskrit word which means union. Traditionally, yoga is a way by which an individual joins self with the Divine, Universal Spirit, or Cosmic Consciousness. It includes both Physical and mental exercises are designed to help achieve this goal. On the Physical level, yoga postures, called asanas, are designed to tone, strengthen, and align the body. These postures are performed to make the spine supple,

healthy and to promote blood flow to all the organs, glands, and tissues, keep all the systems of the body healthy. On the mental level, yoga uses breathing techniques (pranayama) and meditation (Dhyana) to quiet, clarify, and discipline the mind^[12].

AIM OF THE STUDY

To find the effectiveness of stretching exercises and yoga postures to reduce the menstrual symptoms and pain in primary dysmenorrhea.

OBJECTIVE OF THE STUDY

- To study the effectiveness of stretching exercise in primary dysmenorrhea in young adults.
- To study the effectiveness of yoga postures in primary dysmenorrhea in young adults.
- To compare the effectiveness of stretching exercise and yoga postures in young adults.

NEED OF THE STUDY

Now a day, dysmenorrhea is the 75% of common gynecological problem found in young adults. In order to reduce the menstrual pain and symptoms in primary dysmenorrhea through yoga postures and stretching exercise.

BACKGROUND OF THE STUDY

In this previous study focused on the comparison of aerobic versus and stretching program over pain and menstrual symptoms in subjects with dysmenorrhea. The result of this study has no significant different between aerobic versus stretching exercise program over pain and symptoms in subjects with primary dysmenorrhea. In this study was focused on stretching exercise versus yoga position in primary dysmenorrhea in order to reduce the pain and symptoms.

HYPOTHESIS

NULL HYPOTHESIS:

There is no significant difference in reducing pain and menstrual symptoms in primary dysmenorrhea by stretching exercise and yoga postures.

ALTERNATE HYPOTHESIS

There is no significant difference in reducing pain and menstrual symptoms in primary dysmenorrhea by stretching exercise and yoga postures.

METHODOLOGY

STUDY DESIGN	: Experimental study
SAMPLE METHOD	: Convenient sample
SAMPLE SIZE	: 30 members
STUDY DURATION	: 3 month

INCLUSION CRITERIA

- Age 18-22years
- Pain for 2-3 days for past 2 month
- Had mild, moderate, and strong are measured by MMDQ

EXCLUSION CRITERIA

- Irregular menstrual cycle
- Polycystic ovarian diseases
- Any hormonal therapy
- Already practicing yoga
- Menstruation due to stress

OUTCOME MEASURES

- Numerical pain rating scale
- Menstrual Distress Questionnaire (MDQ)

PROCEDURE:

All the 30 subjects included in the study were based on the inclusion and exclusion criteria. This study was conducted for three months. The subjects participating in this study were briefed about the nature of the study and intervention. After briefing them about the study, the written consent was taken. Patients were randomly assigned into two groups. Group A stretching exercise and group B yoga with 15 subjects in each group. The demographic data like name, age, menstrual flow. Initial evaluation for their pain intensity by numerical pain rating scale was taken. Moos menstrual distress questionnaire score was taken.

GROUP A

Stretching exercise along with 4 types of physical activities was included.

- 10 minutes stretching exercise for hamstring, whole spine and tendon Achilles.
- Supine lying, face up with legs and knee bent and they are instructed to perform abdominal breathing about 10 minutes.
- Ask them to stand, holding back of chair and ask them to lift one heel off the floor and the other heel, repeat for 20 times
- Ask them to stand, holding back of the chair, and then instructed them to do 5 deep knee bends.

- Ask them to lie in back and then instruct them to lift and bring the knees to touch chest, repeat this for 10 times.

GROUP B

Yoga is typically performed slowly, in a relaxed manner, with awareness of one's body and respiration. In this group was educated with selected yoga position. these selections was done by keeping the mind, that the subjects were not able to perform difficult postures. The selected yoga postures were as follow.

All the postures were supervised by the therapist. during of each posture was kept flexible as every individuals physical capacity will be different. Postures flood the nervous system with sensory input from all over the body .this is not so much of twist at it is a swivel, one in which the pelvis rotates 90 degree causing the thigh is flexed with respect to the torso and the left thigh is hyper extended .In this sense, abducted hips are more in the line with the frontal plane of trunk. Such position causes facilitation of autonomic nervous system causing increase awareness of the nervous system, coordinating and stretching of the muscle leads

ti increasing in blood supply and pain relief. Twisting postures including uttahita trikonasana causes axial compression and release of blood vessels of abdomen and pelvic organ. Forward bending paschimottasana and badhakonasana tend to inhibit the somatic nervous system and sympathetic limb of autonomic nervous system. Flexing forward enough in spine and hip to compress the abdomen have mildly vigorating effects on abdominal organs stimulating enteric nervous system. Muscles that encircles artery and arterioles which allows those vessels to dilate to increase the blood supply.

All the 30 subjects were instructed to perform the particular group exercise, twice-a-day for 30 minutes of 3 days per week. After end of each cycle all the subjects were filled with the numerical pain rating scale and moos menstrual distress questionnaire. it was continued for all the three cycles. totally 3 times each subject have to fill the forms during the study. The above-mentioned outcome measures were documented, and data was analyzed.

DATA ANALYSIS

Table 1 shows the pre and post values for MOOS MENSTRUAL DISTRESS QUESTIONARIE

MMDQ	MEAN		STANDARD DEVIATION		t-Value	p-Value
	PRE-MEAN	POST MEAN	PRE SD	POST SD		
Group A (stretching)	47.87	30.73	14	14.31	3.314	0.0025
Group B (yoga)	47.6	21.93	15.35	13.05	4.934	0.0001

Table 2 shows the pre and post values for NUMERICAL PAIN RATING SCALE.

NPRS	MEAN		STANDARD DEVIATION		t-Value	p-Value
	PRE-MEAN	POST MEAN	PRE SD	POST SD		
Group A (stretching)	6.07	2.67	1.67	1.18	6.654	0.0001
Group B (yoga)	6.2	2.27	1.97	0.96	6.946	0.0001

Figure 1: Representing the pre and post mean value for the Group A and Group B using MMDQ.

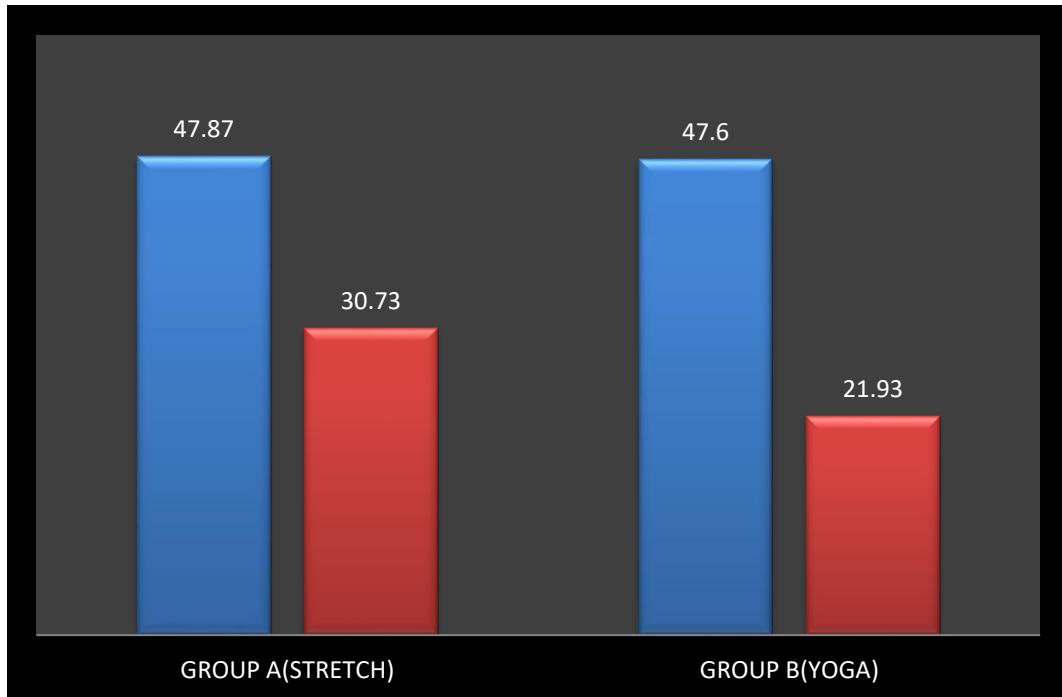
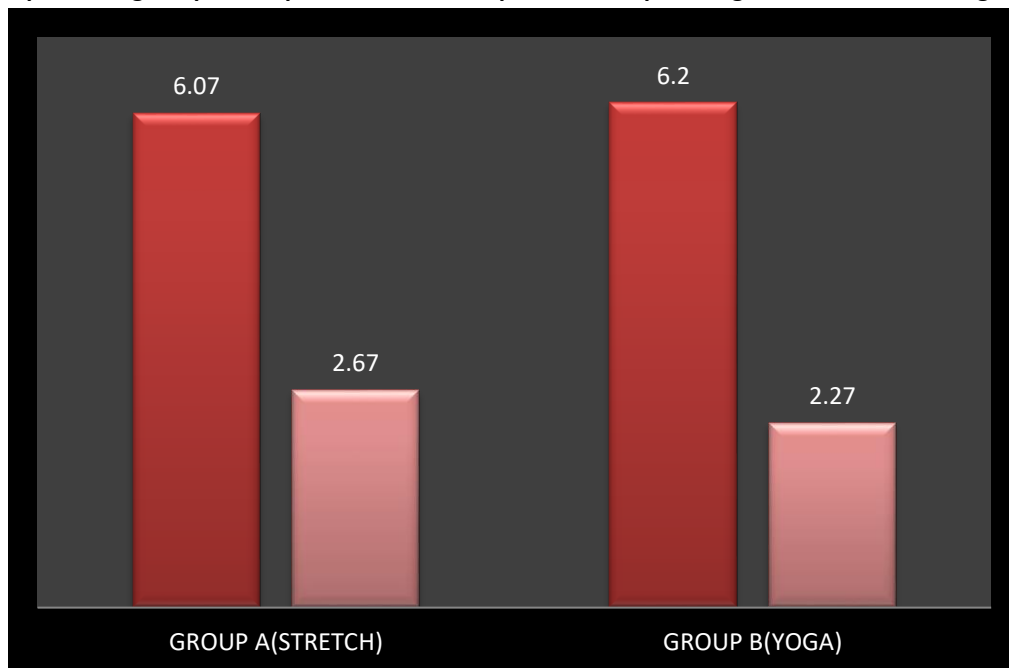


Figure 2: Representing the pre and post value for Group A and Group B using Numerical Pain rating scale.



RESULT

As a result, group A (stretching exercise) pre- mean value of MMDQ was (47.87) and by NPRS pre- mean value was (6.07) and the post value of MMDQ was (30.73) and NPRS was (2.67). The p-value of group A was 0.0025. group B(yoga) pre-mean value of MMDQ was (47.60) and NPRS value was (6.20) and the post mean value was (21.93) and NPRS value was (2.27). The p-value of group B was 0.0001.

DISCUSSION

The study was focused on reducing pain and menstrual symptom in primary dysmenorrhea. In that 30 subjects were divided into 2 groups. Group A (stretching) and Group B(yoga). As the result, Group B was found effective then Group A. Group B P- value was 0.0001 and Group A p-value was 0.0025.

In Group A (Stretching) therapeutic exercise can increase the secretion of endorphins from the brain, and these materials in turn raise the pain threshold of the body believed that contracted ligamentous bands in the abdominal region were the causative factor for physical compression of nerve pathways and their irritation, so the proposed series of stretching exercise was considered very effective.

In Group B (yoga), all the 15 subjects were performed various asanas which was more helpful in reducing pain and decrease the symptoms of menstruation group A. In that all the asanas have the separate features like somatic nervous system, sympathetic limb of autonomic nervous system, also stimulating the nervous system. In that, Postures flood the nervous system with sensory input from all over the body. this is not so much of twist at it is a swivel, one in which the pelvis rotates 90 degrees causing the thigh is flexed with respect to the torso and the left thigh is hyper extended. In this sense, abducted hips are more in the line with the frontal plane of trunk. such position causes facilitation of autonomic nervous system causing increase awareness of the nervous system, coordinating and stretching of the muscle leads to increasing in blood supply and pain relief. Twisting postures including uttahita trikonasana causes axial compression and release of blood vessels of abdomen and pelvic organ. Forward bending paschimottasana and badhakonasana tend to inhibit the somatic nervous system and sympathetic limb of autonomic nervous system. Flexing forward enough in spine and hip to compress the abdomen have mildly

vigorating effects on abdominal organs stimulating enteric nervous system. Muscles that encircles artery and arterioles which allows those vessels to dilate to increase the blood supply.

LIMITATIONS

The limitation of the study is that the patients of mild, moderate, severe, strong have to take so it can alter the results. Life style changes, ethnicity and hereditary factors can affect the results. Only students are included so generalize ability to all females can be a question. Intervention was given only for three months. in this study only, pain was considered, and other associated symptoms of dysmenorrhea were considered.

RECOMMENDATION

This study should be conducted with long duration. Particular range can be taken by MMDQ. In future studies affects of life style changes, hereditary factors, and ethnicity should be controlled to avoid changes in results. Further studies should be conducted to see effects of pain on further aspects of life like psychological effects.

CONCLUSION

The above pre-test and post-test mean value tables shows that both the groups had a significant improvement in reducing menstrual pain and symptoms in primary dysmenorrhoea. Although improvement was seen in both the groups, but group B yoga was effective compared to the stretching exercise. The study was to find the efficiency of stretching exercise and yoga postures for reducing the pain and menstrual symptoms in primary dysmenorrhoea. And both group was significantly improved. As result of the study concluded, yoga postures (Group B) was more effective in reducing pain and reducing menstrual symptoms than the stretching exercise.

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