

Immediate Effect of Yoga Postures v/s Physiotherapy Exercises Along With K-Taping on Pain in Dysmenorrhea

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ABSTRACT

Background : Dysmenorrhea is defined as the cramping pain accompanying menstruation. They are further classified into two types based on pathophysiology. Primary dysmenorrhea is widely prevalent in the general population. More than 50% of teenagers and 30-50% of menstruating women suffer from varying symptoms, such as, uterine cramps, nausea, backache, diarrhoea, giddiness, syncope and fainting. Apart from pharmacological treatment physical exercises have been suggested as non-pharmacological treatment. It is seen that exercises have analgesic effect in a nonspecific way. Various forms of exercise (for.eg. Yoga and physiotherapy) have shown different results in pain relief and premenstrual syndrome. exercise have been shown as preventive measures as well.

Objectives:

1. To assess the effectiveness of yoga poses along with k-taping on Pain in primary dysmenorrhea.
2. To assess the effectiveness of physiotherapy exercises along with k-taping on Pain in primary dysmenorrhea.
3. To compare the effectiveness of yoga poses v/s physiotherapy exercises along with k- taping in primary dysmenorrhea on Pain.

Materials and Methodology:

This was a experimental study that included 30 female participants who were suffering from dysmenorrhea. The subjects were randomly dividing in to 2 groups; group A were given physiotherapy exercise and group B were given yoga postures.

Both the group of participants received k-taping. These interventions were given on the day of menstruation. Pre and post pain evaluation were done by NPRS.

Result and Conclusion:

The study concludes that both yogic postures and physiotherapy exercises helped in immediate reduction of pain in primary dysmenorrhea.

Yogic postures along with k-taping helped in pain reduction Physiotherapy exercises along with k-taping helped in reduction of pain.

Keywords : Dysmenorrhea, Pain, Yoga, Physiotherapy, K-Taping, Immediate Effect.

I. INTRODUCTION

Dysmenorrhea is defined as the cramping pain accompanying menstruation. They are further classified into two types based on pathophysiology.

Primary dysmenorrhea refers to one that is not associated with any identifiable pelvic pathology.

Spasmodic pain is attributed to myometrial contractions due to increased PGF_{2a} secreted under progesterone effect.

Primary dysmenorrhoea is widely prevalent; more than 50% of teenagers and 30–50% of menstruating women suffer from varying degrees of discomfort. The severe incapacitating type which interferes with a woman's daily activities affects only about 5–15% of the population. Its prevalence is higher amongst the more intelligent and sensitive working-class women. Both the local and systemic symptoms are apparently the result of increased levels of prostaglandins (F_{2a}) in the menstrual fluid. This results in uterine cramping, nausea, vomiting, backache, diarrhoea, giddiness, syncope and fainting.¹

Primary dysmenorrhoea occurs in ovulatory cycles; hence, it makes its appearance a few years after menarche with at least 6–12 months of painless periods. It is most intense on the first day of menses and progressively lessens with menstrual flow. It often lessens with passage of time and after childbirth.¹

Backache, abdominal bloating fatigue and breast heaviness are the most common symptoms. These levels are highest during the first two days of menses, when symptoms peak. The risk factors for dysmenorrhea are; age <20 years, nulliparity, heavy menstrual flow, smoking, high/upper socioeconomic status; attempts to lose weight, physical activity, disruption of social networks, depression and anxiety.¹¹

Based on this understanding, pharmacological therapies for primary dysmenorrhoea focus on

alleviating menstrual pain and relaxing the uterine muscles by using non-steroidal anti-inflammatory drugs (NSAIDs) or oral contraceptive pills.¹

Apart from pharmacological treatment physical exercises have been suggested as non pharmacological treatment. It is seen that exercises have analgesic effect in a non specific way.

Various forms of exercise have shown different results in pain relief and premenstrual syndrome. Exercise have been shown as preventive measures as well.

Yoga is now an alternative therapy which helps in prevention of many health problems. The word yoga is derived from the sanskrit root yuj meaning to join,bind. Yoga poses now are a common choice to a healthier lifestyle.² Yoga's potential mental and physical health benefits are reductions in sympathetic nervous system tone, increases in vagal activity and lowering inflammation; all of which could have favourable endocrine and immune consequences. The physical benefits of yoga are linked to the release of β -endorphins and the shift caused in neurotransmitter levels linked to emotions such as dopamine and serotonin.³ Very few studies suggested that yoga reduced the severity and duration of pain in primary dysmenorrhea.

Physiotherapy exercises and modalities have also shown pain relief in dysmenorrhea. Non-invasive, and minimally invasive interventions that have been proposed for obtaining relief from dysmenorrhea symptoms include acupuncture and acupressure, biofeedback, heat treatments, transcutaneous electrical nerve stimulation (TENS), and relaxation techniques.⁴ Transcutaneous electrical nerve stimulation (TENS) is a non pharmacological and noninvasive pain-relief method that has demonstrated effectiveness for a variety of conditions,

including labor pain, primary dysmenorrhea, and pain following obstetric and gynecologic surgery.⁵

Kinesio taping is a newer technique which is non pharmacological and non invasive pain relief method. Taping therapy eases pain by contracting relevant muscles or improving blood circulation through tape attached to the skin. Kinesio taping is a technique which is based on the body's own natural healing process and is used for anything from headaches to foot problems and everything in between.⁶

II. MATERIALS AND METHODOLOGY

Study location : Study was conducted in Dr.D.Y.Patil college of physiotherapy, Pune.

Sampling method : Purposeful sampling was done. 30 females suffering from dysmenorrhea were screened and selected. Age group selected were 18-40 years old. Females with any history of recent abdominal surgeries, Any respiratory condition, Skin conditions were excluded from this study.

Procedure and data collection: 30 samples were randomly divided into group A and group B. NPRS was recorded before the intervention.

Group A were given physiotherapy as intervention in which 5 minutes of warm up in the form of neck flexion, extension and rotation, trunk flexion and extension, shoulder rotations, wrist movements, hip movements, ankle movements. Then are asked to perform stretching of neck, biceps, triceps, tensor fascic lata, pelvic muscles, quadriceps, tendo achillies . Each exercise is held for the total of 3 times with 10 seconds hold.⁸ This step is followed by stretching of specific muscles like stretching the connective tissue around the pelvis, hip flexors and muscles in the inner thigh.⁸

After the stretching, now they were asked to perform kegals exercises for 20 reps with 10 secs hold each.

Followed by 5 minutes of relaxation in the form of diaphragmatic breathing.

Group B then received yoga poses such as; supta svatikasana, supta baddhakonasana, adhomukha virasana, adhomukha svastikasana, paschimottanasana. Each pose was held for 5 minutes followed by 5 minutes of shavasana.⁷

After these intervention, NPRS was recorded again.

The values were statistically analysed using primer software, where paired t-test was used for the values and graphs were formed. **Study location :** Study was conducted in Dr.D.Y.Patil college of physiotherapy, Pune.

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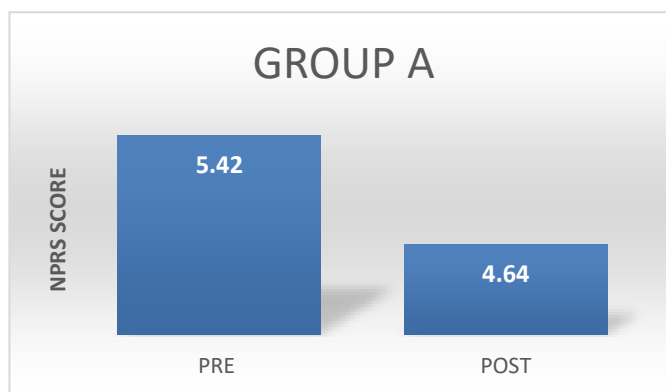
III. RESULTS AND DISCUSSION

In this study 30 females suffering from dysmenorrhea were selected and divided into group A(n=14) and group B(n=16) randomly and NPRS was recorded before and after the intervention and then were compared and graphically represented.

Table 1 : Comparison of Pre And Post Values of Pain (NPRS) For Group A.

PAIN	PRE	SD	POST	SD	MEAN DIFFERENCE	P VALUE	T VALUE
GROUP A	5.42	1.223	4.64	4.643	0.78	0.000	6.904

GRAPH 1 : PRE v/s POST NPRS SCORE FOR GROUP A



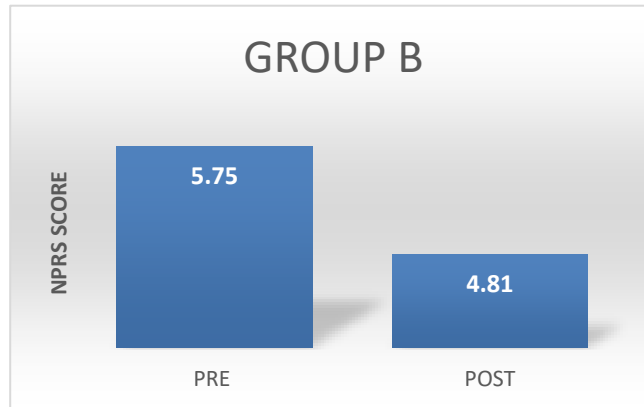
INTERPRETATION:

According to the above data recorded pre and post of intervention. there was a highly significant decrease (p value < 0.05) in NPRS score in Group A. This graph shows group A mean NPRS score where pre treatment mean was 5.42 which decreased to 4.64 post treatment, with the mean difference found to be 0.78.

Table 2 : Comparison of Pre And Post Values Of Pain (NPRS) In Group B.

PAIN	PRE	SD	POST	SD	MEAN DIFFERENCE	P VALUE	T VALUE
GROUP B	5.75	1.125	4.812	1.216	0.938	0.000	8.474

GRAPH 2 : PRE v/s POST NPRS SCORE FOR GROUP B.



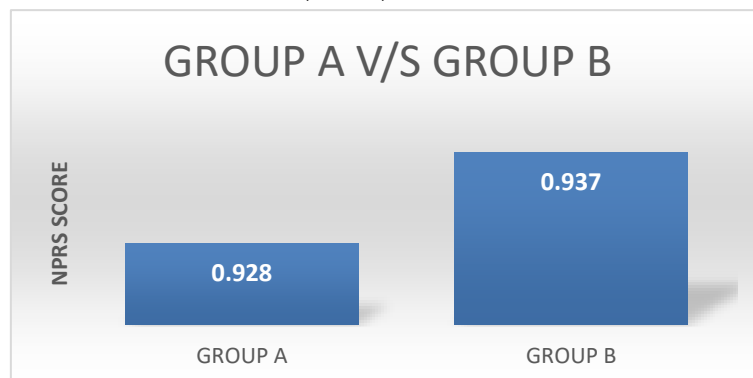
INTERPRETATION:

According to the above data recorded pre and post of intervention. there was a highly significant **decrease** (p value < 0.05) in NPRS score in Group B. This graph shows group B mean NPRS score where pre treatment mean was 5.75 which decreased to 4.812 post treatment, with the mean difference found to be 0.938.

Table 3 : Comparison of Group A Vs Group B For Pain (NPRS).

PAIN	MEAN	SD	P VALUE	T VALUE
GROUP A	0.916	0.2673	0.948	-0.066
GROUP B	0.937	0.4425		

GRAPH 3 : GROUP A VS GROUP B FOR PAIN (NPRS).



INTERPRETATION:

Table 3 and graph 3 shows comparison of pre and post values of NPRS among group A and group B . According to the above data recorded before and after of intervention there was no significant difference (p value < 0.05) in pain between Group A and B .

DISCUSSION

The aim of this study was to compare the effect of yoga postures and physiotherapy exercises along with k-taping in primary dysmenorrhea. 30 samples were screened, selected and divided in 2 groups by purposive sampling. Pre value of all outcome measures were noted. Group A (n=14) received physiotherapy and Group B (n=16) received yogic postures as intervention. After the intervention, the data was recorded in a tabular form and represented graphically.

In Group A, the results showed that the pain had reduced significantly ($p < 0.000$) before and after treatment.

In Group B, the results showed that the pain had reduced significantly ($p < 0.000$) before and after treatment.

When the comparison of both the groups were performed, both the groups showed similar amount of pain reduction. They showed no significant difference in the data recorded. ($p < 0.005$).

Study conducted by Zahra Rakhshae (2011) said that yoga is believed to reduce pain by helping brain's pain center to regulate the gate controlling mechanism located at spinal cord and secretes natural painkillers in the body⁹. A similar study by Nag U et al. studied the effect of yoga on progesterone levels and pain relief in dysmenorrhea said that the yoga poses in dysmenorrhea, revealed that there was a significant reduction in pain in experimental group as compare to the control group.³

Previous studies have shown that physiotherapy protocol, have shown to increase local blood supply, which apparently favors more rapid elimination of prostaglandins which has been suggested to decrease the duration and intensity of menstrual pain.²

In the same study it is also showed that specific stretching of the hip abductors, connective tissue around the pelvis and hip flexors (Billig's exercises) helped in reduction of the dysmenorrhic pain to radiate to the lower limbs and lumbar region².

Along with these exercises both the groups received k taping. K taping is an auxiliary treatment that maximizes natural recovery ability. This technique is said to promote three effects: to normalize muscular function; to increase lymphatic and vascular flow; and to diminish pain.¹⁰ In a study done by Chaegil Lim et al (2013) showed that the kinesio taping would have stimulated the tactile fibres in the skin suppressing the pain sensitizing action of prostaglandin in the spinal cord thus reducing the pain.¹⁰

In this study both the groups have shown reduction in abdominal swelling. Su Ying Tsai (2016) studied that after yoga programme, there was significant reduction in abdominal bloating and other symptoms of dysmenorrhea.¹³

Priya Kananet al (2013) shown that physiotherapy protocol, have shown to increase local blood supply, which apparently favors more rapid elimination of prostaglandins.

Both the groups when paired along with k-taping technique, will help the in lifting the skin and that decreases the pressure and increases the lymphatic drainage which helps in reduction of swelling.¹⁰

It can be further concluded that both the interventions may provide immediate relief for the symptoms of dysmenorrhea and can be used as the alternative therapy.

These interventions could be given individually or in combination with each other as it may suit the person.

Inculcating physical exercises and yogic practise might help in reduction of the symptoms of dymenorrhea.

IV. CONCLUSION

The study concludes that both yogic postures and physiotherapy exercises helped in immediate reduction of pain in primary dysmenorrhea. Yogic postures along with k-taping helped in pain reduction Physiotherapy exercises along with k-taping helped in reduction of pain. Both can be used as an alternate and non pharmacological therapy for dysmenorrhea

V. REFERENCES

[1]. VG Padubidri, SN Daftary ,Shaw's textbook of gynaecology, 16th ed, Hopkin & Bourne, 2011:36

[2]. B.K.S Iyengar, Light on Yoga ,Harper collins publishers 2013.

[3]. Nag U, Chakravarthy VK, Burra KC,Effect of yoga on progesterone levels and pain relief in primary dysmenorrhea,(2013) IJRRMS 2013;3(2).

[4]. Kannan P, Claydon L.S,Some physiotherapy treatments may relieve menstrual pain in women with primary dysmenorrhea: a systematic review,(2014)Journal of Physiotherapy 60 (2014) 13–21

[5]. Tugay.N, Akbayrak. T, Demirtürk.F, Karakaya.I.C, Kocaacar.O,Tugay.U, Karakaya M.G, and Demirtürk.F,Effectiveness of Transcutaneous Electrical Nerve Stimulation and Interferential Current in Primary Dysmenorrhea,PAIN MEDICINE Volume 8:Number 4 :2007

[6]. Chaegil. L,Yongnam P., Youngsook B, The Effect of the Kinesio Taping and Spiral Taping on Menstrual Pain and Premenstrual Syndrome(2013),J. Phys. Ther. Sci. 25: 761–764, 2013.

[7]. Dr. Geeta .S. Iyengar,The practice of women during the whole month,published by the Iyengar Yoga Association (UK) April 2009.

[8]. Ortiz M.I, Marquez S.K.C ,Quezada L.C.R, Canovas G.M, Diaz A.P.J, Effect of a physiotherapy program in women with primary dysmenorrhea ,European Journal of Obstetrics & Gynecology and Reproductive Biology 194 (2015) 24–29 .

[9]. Rakhshae Z,Effect of Three Yoga Poses (Cobra, Cat and Fish Poses) in Women with Primary Dysmenorrhea: A Randomized Clinical Trial,(2011) North American Society for Pediatric and Adolescent Gynecology. Published by Elsevier Inc.

[10]. Kumbrink B, K taping an illustrated guide, Springer publication 2012.

[11]. Singh A, Dukhu K, Singh H, Nel B, Singh P, Tivari P,Prevalence and severity of dysmenorrhea: A problem related to menstruation in first year and second year female medical students.Indian J Physiol Pharmacol 2008; 52 (4) : 389–397.

- [12]. Hamer .C , Denniston.H,Dysmenorrhea and Its Relation to Abdominal Strength as Tested by the Wisconsin Method (2013),American Physical Education Association, 4:1, 229-237

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