

**TO ASSESS AND COMPARE THE EFFECTIVENESS OF
KINESIOTAPING AND HOT PACK VERSUS MASSAGE AND HOT
PACK ON PRIMARY DYSMENORRHEA IN HOSTEL GIRLS**

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ABSTRACT

Aim:To assess and compare the effectiveness of Kinesiotaping and hot pack versus Massage and hot pack using VAS Scale for pain on Primary Dysmenorrhea in Hostel girls.

Material and Methods:This comparative study was conducted in girls hostel of Ruxmaniben depchand Gardi Medical College,Ujjain (M.P). It involved 30 females aged 18-25 years who had been experiencing menstrual pain which were divided into two groups of 15 each by simple random sampling.Group A (Kinesiotaping and hot pack) and Group B(Massage and hot pack).Duration of study was three months. Each female was treated for first 2 days of her period or until the pain disappears for three consecutive months. Pain intensity was noted using VAS Scale.

Results: The results of the study showed that there was a significant reduction in the pain intensity on VAS scale . On comparison of mean of both the groups using Independent T test ,there was some difference found, but statistically it was not significant.($p>0.05$).

Conclusion:In the present study, both the groups showed significant improvement in terms of pain which was assessed by VAS over the course of 3 months. Despite the kinesiotaping and hot pack group showed immediate and better results than the massage and hot pack group, the results were not statistically significant.Therefore we can conclude that both kinesiotaping and Massage along with hot pack can be used for pain management in primary dysmenorrhea in hostel girls.

Keywords: Primary dysmenorrhea , Kinesiotaping ,Hot Pack ,Hostel girls.

INTRODUCTION

Menstruation is the visible manifestation of cyclic physiologic uterine bleeding due to the shedding of the endometrium following invisible interplay of hormones mainly through hypothalamus pituitary ovarian axis. First menstruation occurs between 11-15 years of age which is known as Menarche. It continues cyclically at intervals of 21-35 days with a mean

of 28 days. Duration of menstruation is about 4-5 days. Average amount of blood loss which is considered normal as 35 mL.¹

Dysmenorrhea literally means painful menstruation. There are two types of dysmenorrhea – Primary and Secondary. Primary dysmenorrhea is one where there is no identifiable pelvic pathology. Primary Dysmenorrhoea is pelvic or lower abdominal cyclic or recurrent pain associated with menses. Its prevalence is more common in young women. It usually starts within 24 hours of menses and may last for 48-72 hours.² Psychosomatic factors of tension and anxiety, abnormal anatomical and functional aspect of myometrium – irregular thickening and hyperplasia of smooth muscle and less vascularity, imbalance in autonomic nervous control of uterus and prostaglandins are released with maximum production during shedding of endometrium.³ It is a strong vasoconstrictor which causes ischemia of myometrium.¹ Due to this, there is increased myometrial contraction with or without dysrhythmia. The effects of menstrual pain on teenagers include discomfort problems, decreased performance, insomnia, losing appetite, problems in interpersonal relationships, difficulty concentrating on work and learning.⁴ Major symptom is lower abdominal or lumbar region pain followed by other symptoms such as nausea, vomiting and headache.² Traditionally, superficial heating has been used in different forms (e.g., hot water bags, towels or bottles) to ease menstrual pain. But now a days there are many methods available to relief menstrual pain such as analgesics, TENS, yoga, kinesiotaping, therapeutic massage. Hot pack is a type of non-pharmacological method and can be used as a mean to mitigate pain and induces short term muscle relaxation. Hot packs provide superficial moist heat. Pain relief by hot pack is achieved due to reducing nerve conduction velocity or elevated pain threshold or may be due to sedative or counter-irritant effect. It relieves pain by increasing blood flow to the part to be treated and eliminating pain-inducing metabolic substances.⁵ Kinesiotaping is a technique that is based on body's own natural healing process and used for alleviating pain. Kinesiotaping has been taking popularity, not only for musculoskeletal conditions but also for pain control. Kinesiotape when applied on the skin produces sensory tactile impulses that can block or reduce the arrival of pain sensations to the brain.¹ Kinesiotape also relaxes the body & reduces the symptoms by normalizing reduced muscle strength & muscle tension through homeostasis and induces muscle balance with surroundings by improving lymphatic circulation.⁵ Therapeutic massage is another alternative to treat the menstrual cramps. It is a safe, non-aggressive and simple method that carries very few side effects. Soft tissue manipulation techniques like connective tissue massage, stroking and effleurage can be used to relieve pain or to reduce the intensity of pain.

Effleurage is also one non-pharmacological therapy method considered effective in reducing pain. Effleurage is a calm, rhythmic massaging technique, pressurized gently distally or downward. Effleurage is the act of pressing by hand on soft tissues of body without causing changes in joint position. Effleurage is unidirectional manipulation in which the hand of the therapist passes from distal to proximal direction.⁴ Effleurage aims to improve blood circulation, put pressure on, and warm the abdominal muscles and increase physical and mental relaxation. Effleurage is a massage technique that is safe, easy, does not need a lot of

tools, does not need money, has no side effects and can be done alone.^{4,6} In the present study effleurage method of massage was used.

Hostel girls face many crises and problems in their lives as they live away from their family. Dysmenorrhea is one of the such problem that can negatively affect their ability to work.

Approximately 50 to 70% of females have dysmenorrhea symptoms in some moment of life, being that approximately 10% become unable to perform their routine activities.

Dysmenorrhoea is one of the most frequent gynecological alteration, causing work and academic absence in hostel or college going girls due to its monthly and disabling nature.^{1,2}

There is some literature available on the effects of kinesiotaping in primary dysmenorrhea.^{7,8} but there is no study available in literature who has found out effectiveness of Kinesiotaping and hot pack versus Massage and hot pack on Primary Dysmenorrhea in Hostel girls.

Therefore this study was conducted to to assess and compare the effectiveness of Kinesiotaping and hot pack versus Massage and hot pack using VAS Scale for pain on Primary Dysmenorrhea in Hostel girls.

Material and Methods

Study design –: Comparative study

Source of Data : RD Gardi Medical College, Girls Hostel , Ujjain

Sampling Method: Simple random sampling.

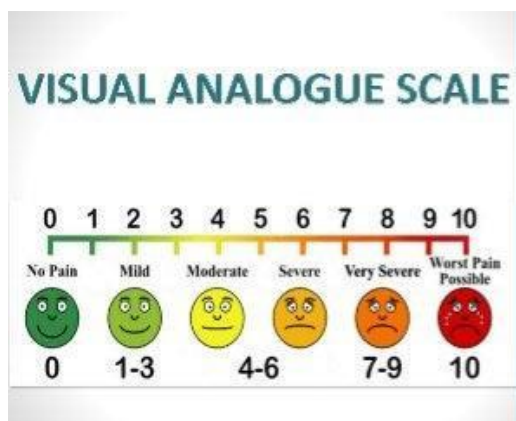
Sample criteria :The study involved 30 subjects who had been experiencing menstrual pain.

Each group were having 15 subjects Then, they were divided randomly in two groups –

1.Group A- Treated with Kinesiotape and hot pack as an alternative treatment.

2.Group B -Treated with massage and hot pack as an alternative treatment.

Study duration – The total duration of study was 3 months. Each female was treated for first 2 days of her period or until the pain disappears.



Outcome measure – Visual analogue scale (Figure 1)

Figure 1-Visual analogue scale

Inclusion criteria –

- 1.Females aged 18-25 having primary dysmenorrhea .
- 2.Females should have a regular menstrual cycle (21 to 35 days cycle).
- 3.Females who have not used analgesics or oral contraceptives during the study period.
- 4.Females should be nulligravida.

Exclusion criteria –

- 1.Females with a severe comorbid disorder.
- 2.Females with a history of any previous abdominal or lumbar surgery.
- 3.Females clinically diagnosed with secondary dysmenorrhea.,PCOD.
- 4.Females having any skin lesion on abdominal area
- 5.Females who have irregular menstrual cycle.

Materials used –Kinesiotape, Hot pack ,Lotion or oil

Procedure :

A gynecological assessment form covering demographic data, history, pain assessment had been given to 40 females in RDGMC girls hostel to fill up the details. Their pain was assessed using VAS. Out of which, 10 females had been excluded according to this study criteria. Then, a brief detail regarding our study was given to the subjects who had been selected according to inclusion criteria and a written consent had been taken. The study involved 30 subjects who had been experiencing menstrual pain. Each group were having 15 subjects Then, they were divided randomly in two groups –

- 1.Group A- Treated with Kinesiotape and hot pack as an alternative treatment.
- 2.Group B -treated with massage and hot pack as an alternative treatment.

Group A-

1.Treatment with Hot pack – Hot pack was given to both the groups on the first two days of their menstrual cycle. Hot pack was applied for approximately 10 minutes with the patient in supine position. Hot pack is applied in such a manner as it touches the patient’s lower abdomen and lower back and sacrum.

2.Kinesiotaping : For Lower abdomen –Subject was taken in the supine lying position and was asked to expose the lower abdomen.Then, Kinesiotape approximately 10-12 cm. long was cut.The corners of the tape were rounded off.The central part of the tape was removed and stretched approximately 25%.The Kinesiotape was applied vertically between the umbilicus and the pubis by adhering the tape from the center and afterwards, other ends of the K-tape were also removed. Again, a piece of Kinesiotape of 8-10 cm length was cut and applied in the horizontal manner perpendicular to the previous tape following the similar procedure.(Figure 2)



Figure 2-Kinesiotape applied on lower abdomen

For Lower back –Subject had been asked to expose the lower back. Then, she was instructed to slightly lean forward.Kinesiotape was cut in the similar manner. Two pieces of Kinesiotape were applied at the lumbar area covering both the PSIS (Posterior superior Iliac spine) in the shape of ‘X’.Kinesiotape was applied once the menstrual pain begins on the first day of period after giving hot pack for 15-20 minutes and had to be remain adhered for about 2 days.(Figure 3)



Figure 3-Kinesiotape applied on lower back

Group B

Massage (Effleurage):Subject was taken in supine lying for abdominal effleurage and in prone for low back.Lower abdomen & lower back of the patient should be exposed for the application of effleurage massage.Lotion or any normal oil was taken in both the palms of the therapist.Both the palms had been positioned on abdomen just above the pubic symphysis and then, a light, firm and constant stroke was performed in a circular direction towards the side of the abdomen, continuing to the umbilicus and then back.For lower back, effleurage is performed from iliac crest towards the upper side in the similar manner.The shape of the movement pattern is like a butterfly.

Hot Pack-Hot pack had been given to the subject for 10 minutes for first two days of period. Thereafter, few drops of oil or lotion had been taken in both the palms. And then effleurage was given to the subjects for almost 5 minutes. Frequency of massage – 2 times in a day for first 2 days of menstrual period or until the pain disappears.

Pain Assesment using VAS Scale:The intensity of pain had been noted for 3 consecutive months immediately after the commencement of period by using VAS (pre-value) and 1 hour after treating with Kinesiotape and hot pack in Group A and Massage and hot pack in Group B. After 24 hours after the application of Kinesiotape and Massage, the intensity of pain is again noted using the VAS Scale.

STATISTICAL ANALYSIS

Data was collected and analysed using SPSS Software.Independent T test was applied for comparison of mean VAS score within Groups.

RESULTS

Table 1-Comparison of Mean VAS Score between Group A and Group B in 1st Month

Independent t test was applied.Non significant results were found. (p>0.05)

VAS Score at 1 month		N	Mean	SD	t	p
before T/t	Group A	15	4.87	1.3	1.335	0.193
	Group B	15	5.60	1.68		
1 hour after T/t	Group A	15	4.00	1.31	0.661	0.514
	Group B	15	4.33	1.45		
24 hours after T/t	Group A	15	2.07	1.44	0.962	0.344
	Group B	15	2.60	1.59		

Table 2-Comparison of Mean VAS Score between Group A and Group B in 2nd Month

Independent t test was applied.Non significant results were found. (p>0.05)

VAS Score at 2 month		N	Mean	SD	t	p
before T/t	Group A	15	4.6	1.64	1.928	0.064
	Group B	15	5.73	1.58		
1 hour after T/t	Group A	15	3.67	1.59	0.235	0.816
	Group B	15	3.8	1.52		
24 hours after T/t	Group A	15	1.87	1.51	1.304	0.203
	Group B	15	2.67	1.84		

Table 3-Comparison of Mean VAS Score between Group A and Group B in 3rd Month

Independent t test was applied.Non significant results were found (p>0.05)

VAS Score at 3 month		N	Mean	SD	t	p
before T/t	Group A	15	4.53	1.51	1.437	0.162

	Group B	15	5.33	1.54		
1 hour after T/t	Group A	15	3.47	1.68	0.436	0.666
	Group B	15	3.73	1.67		
24 hours after T/t	Group A	15	1.6	1.64	0.763	0.452
	Group B	15	2.07	1.71		

DISCUSSION

Table 1 shows Comparison of Mean VAS Score between Group A and Group B in 1st Month and found that there was reduction in pain for both the groups. The effect of Group A (Kinesiotaping with hot pack) was slightly better than Group B (Massage with Hot pack) on the first day of period 4.87 ± 1.64 versus 5.60 ± 1.58 ,1 hour after period 4.00 ± 1.31 versus 4.33 ± 1.45 ,24 hours after period 2.07 ± 1.44 versus 2.60 ± 1.59 .but the results were statistically non significant. ($p > 0.05$)

Table 2 shows the Comparison of Mean VAS Score between Group A and B in 2nd month. there was reduction in pain for both the groups. The effect of Group A (Kinesiotaping with hot pack) was slightly better than Group B (Massage with Hot pack) on the first day of period 4.6 ± 1.64 versus 5.73 ± 1.58 ,1 hour after period 3.67 ± 1.59 versus 3.8 ± 1.52 ,24 hours after period 1.87 ± 1.51 versus 2.67 ± 1.84 , but the results were statistically non significant. ($p > 0.05$).

Table 3 shows the Comparison of Mean VAS Score between Group A and Group B in 3rd Month The effect of Group A (Kinesiotaping with hot pack) was slightly better than Group B (Massage with Hot pack) on the first day of period 4.53 ± 1.51 versus 5.33 ± 1.54 ,1 hour after period 3.47 ± 1.68 versus 3.73 ± 1.67 ,24 hours after period 1.6 ± 1.64 versus 2.07 ± 1.71 but the results were statistically non significant. ($p > 0.05$).

Our results were in accordance with the study done by Jung-Hyun Choi ⁷ who conducted a study on the effects of Kinesiotaping and Hot packs on premenstrual syndrome in females and found that there was more significant decrease in pain in the taping with hot pack group as compared to that of the Taping Group and Hot pack group.

Our results were also in accordance with Another study done by Sucheta Golhar et al⁹ who proposed the effect of kinesiotaping on pain in females with primary dysmenorrhea using VAS Scale. The study concluded that kinesiotaping was effective in reducing pain in primary dysmenorrhea.

Most of the college going girls experience menstrual pain which leads to sickness absenteeism for the almost first 2 days of periods. So, this may also hamper their studies as well as their activities of daily living. Although a lot of interventions are available to deal with menstrual pain like analgesics, TENS, yoga etc. but all these techniques are either expensive, time-consuming or requires medical supervision.

In the present study reduction in pain was observed using kinesiotape.kinesiotaping induces constant relaxation and contraction of muscles by stimulating the cutaneous receptors and thus alleviates the pain.¹⁰

In the present study, heat therapy in the lower abdomen and lower back for the first 2 days also showed significant reduction in menstrual pain According to Jung-Hyun Choi, application of heat is very effective in reduction of VAS score through a mechanism in which heat therapy lead to the expansion of capillaries and increased blood circulation.⁷

In the present study, Effleurage in the lower abdomen and lower back for the first 2 days also showed significant reduction in menstrual pain effleurage massage aims to warm the abdominal and back muscles, improve blood circulation and provide a relaxing effect.

CONCLUSION

1. In the present study, both the groups showed significant improvement in terms of pain which was assessed by VAS over the course of 3 months. Despite the kinesiotope group showed immediate and better results than the massage group, the results were not statistically significant.

2. We have concluded that Kinesiotaping is an easy and safe method to reduce the menstrual pain with minimal side effects so it can be recommended for Primary Dysmenorrhoea in Hostel girls.

3. Effleurage massage aims to warm the abdominal and back muscles, improve blood circulation and provide a relaxing effect. It is one of the cheap and easiest method for reducing the menstrual pain as compared to other interventions.

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