



Effects Of Pilate Therapy In Post Natal Women With Back Pain- A Pilot Study

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ABSTRACT

Introduction: Regaining functional independency after delivery is challenging task to any female. It is mainly due to the impairment that follows in post partum period. Post natal back pain in the predisposing factors for most of the problems that arise. Prevalence is increasing day by day. The purpose of this study was to find out a gold standard measures for managing back pain which is a global burden in post natal women's. Pilate's therapy has been tried out for it.

Methods: A pilot study where 20 post natal females having problem of back pain and abdominal weakness were included. They were assessed on the basis of visual analogue scale and Manual Muscle Testing. Pilate therapy was given for period of 6 weeks.

Results: Using paired t test the scoring was calculated for changes within the group. Pilate therapy was found to have extremely significant difference in reduction of back pain and improving muscle strength statistically.

Conclusion: Pilate therapy is very effective in reducing back pain in post natal women. It significantly improves muscle strength and flexibility of abdominal muscles.

Keywords: Post Natal, Back Pain, Pilates Therapy, Pilot study, Physiotherapy.

Introduction:

The world health organization defined human health in its 1948 constitution as "a state of complete physical, mental, and social well being and not merely the absence of a disease or infirmity"¹. Women's health refers to health issues specific to human female anatomy². Women's body has to undergo lots of physiological changes throughout their life. Pregnancy and child birth are the very important phase in every woman's life. The postpartum period starts following child birth and ends at 42 days. During this period, body undergoes many changes in order to regain the pre pregnancy status of the body. It is in this period that the new mother's body begins its period of recovery and its return to normal. The pregnancy process will have resulted in a gradual change of body shape and function. At term, the women sees a ripely swollen abdomen, enlarged breasts, possibly oedema of the face, hands and legs, deposits of fat on her upper arms, hips, buttocks and thighs, and even perhaps stretch marks³. Post partum period may be associated with complications like postpartum haemorrhage, deep vein thrombosis, pulmonary embolism, gravitational oedema, puerperal infection, breast feeding problems, postural difficulties and backache⁴. During the postpartum period, woman is susceptible to many problems which affect the body. Musculoskeletal dysfunction may include back pain, diastasis rectii, pain in the epidural site, thoracic pain, coccydynia, symphysis pubic pain.

Postnatal low back pain (LBP) and pelvic pain are common problems in the post-partum period, and these conditions can vary in intensity from being a mild annoyance to presenting as a severely disabling condition. The incidence of postnatal LBP has been shown to range from 21% to 82% in the first year post-partum (Östgaard&Andersson 1992; To & Wong 2003)⁵.

Low back pain is chronic once it has persisted for more than 3 months or more. Mostly its is described as non specific, mechanical low back pain, to which no recognizable pathology can be attributed (Duthey 2013)⁶. Vleeming et.al (2008) described pregnancy related pelvic pain as pain generally experienced between

posterior iliac crest and the gluteal fold, particularly in the vicinity of the sacroiliac joint. Back pain can affect the women in many ways. It may include difficulty in performing day to day activities as well as problems in baby care. In few cases back pain may persist to chronic phase which is debilitating. Remission of pain occurred in 51% at 1 month and 78% at 6 months in CS group, while in the normal vaginal delivery group 55% at 1 month and 85% in the 6th month had remission of pain. Recurrent or continuous LBPP is common in postpartum period⁷. It is evident that delivering proper care to improve the health and quality of life of women is a must that needs a regular evidence-based exercise program for postpartum care. There is general consensus in the literature that there is reduction in the core muscle strength in the 2nd and the 3rd trimester. Physical therapy was shown to have positive influence on quality of life and perceived well-being in a wide range of patient populations requiring cardiopulmonary conditions and mental illnesses. In 1999, Sampsel et al concluded that women who participate in physical exercises in postpartum period enjoy advantages such as less weight retention, and higher delivery adjustment scores. As per the clinical practical guideline for management of pelvic girdle pain in pregnancy and post-partum, management of PGP should be multidisciplinary and multifactorial. Nonsteroidal anti-inflammatory drugs (NSAIDS) should only be used after delivery (Jain et al., 2006). Individualised Physiotherapy programmes are recommended based on the findings of an individual assessment⁸. Post natal care has been acceptably low in India given the risks of mortality for mothers and babies shortly after birth. There is an also significant socioeconomic inequality in access to PNC. The coverage of essential PNC is inadequate. There is need for strengthening PNC services to keep pace with advances in the coverage of care in India through targeted policy interventions¹⁰. Despite the apparently high prevalence of LBP and pelvic pain in the first year post-partum, the use of exercise to alleviate these problems has not been extensively researched. A standard post natal care needs to be established as literatures on these programs as there is : Lack of basic screening and continued monitoring, Exercises not adapted for any pain, posture or other issues and No accommodation for post partum status. Pilates is a method of exercise which focuses on improving the body’s core by making the body more flexible and stronger. Few Studies demonstrate the efficacy of a specific Pilates exercise program over another in the treatment of pain. However, the consensus in the field suggests that Pilates method is more effective than minimal physical exercise intervention in reducing pain. These conclusions need to be supported by other⁹

Material and methods:

This pilot study was done in Krishna Hospital Karad Taluka in Maharashtra. After getting clearance from the institutional ethical committee, the study population of 20 was taken. Post natal females with back pain and or associated leg pain in vaginal delivery (Normal / instrument assisted) with Age 18- 35 years, 48 hours after delivery, Core muscle strength grade 3 were included in this study. Females with history of trauma and any disability, with upper back pain, foot pain, with problems related to neurological and cardio respiratory systems, with medications for any systemic illness were excluded from this study.

Subjects were included in single group. They received Pilate therapy for a period of 6 weeks. Treatment was given for 6 weeks (4 times / week). Data collection was done on pre and post treatment findings. The changes were measured based on visual analogue scale for assessing Back Pain and Manual Muscle Testing grade of Abdominal muscles to check the status of muscle strength.

Results :

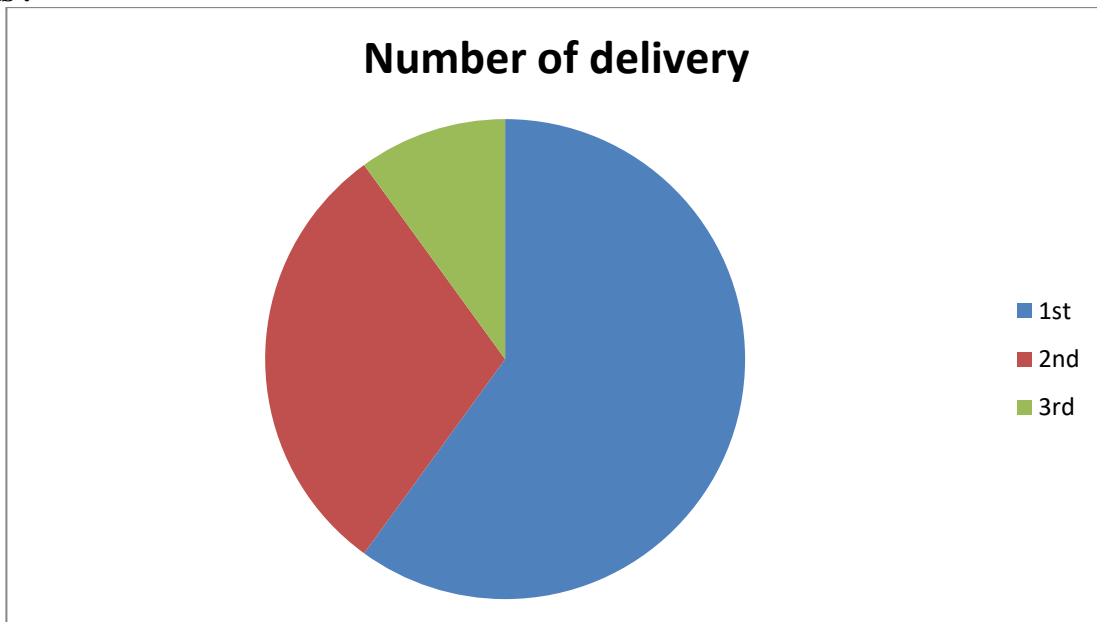


Diagram 1: Pie diagram showing distribution of Number of delivery. Out of the total 20 females- first delivery was in 12 , second in 6 and third in 2.

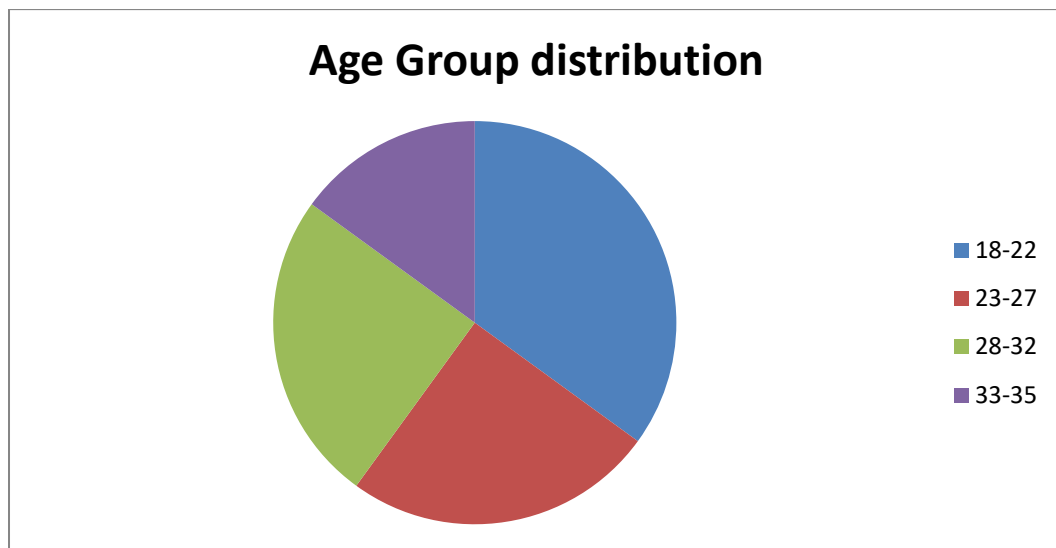


Diagram 2: Pie diagram showing distribution of age group.7 females belong to age group between 18 to 22, 5 between 22 to 27, 5 between 28 to 32 and 3 between 33 to 35 ages

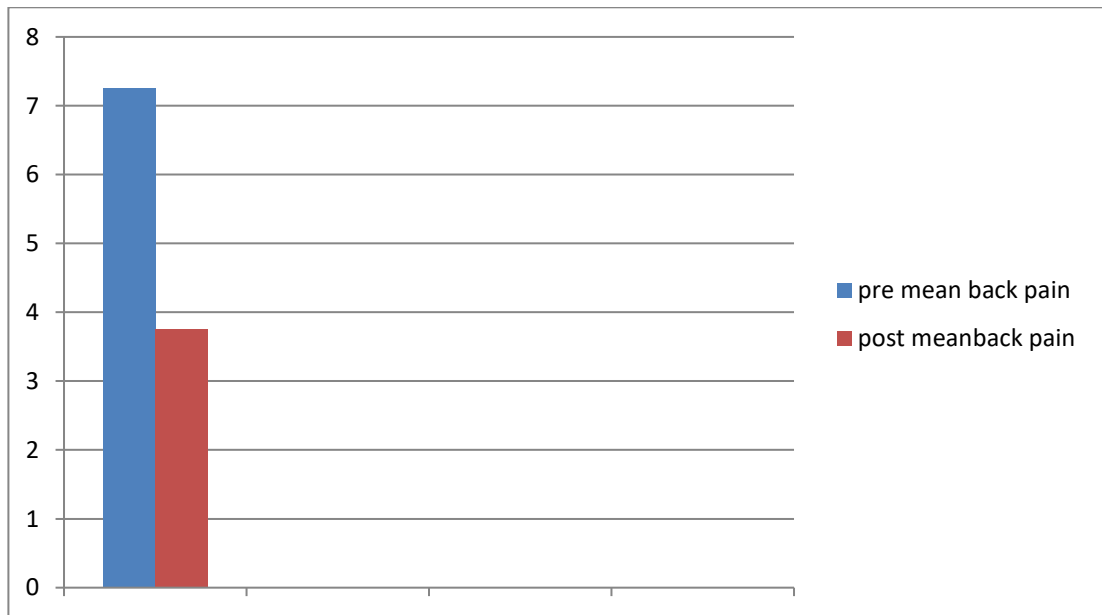
The outcome measures used were :

1. Visual analogue scale – For assessing Back Pain
2. Abdominal muscle strength – For assessing changes in Muscle Strength.

1. Visual analogue scale :

| Sr no | Outcome measure | Pre | | Post | |
|-------|-----------------------------|------|-------|------|-------|
| | | Mean | SD | Mean | SD |
| 1 | Visual analogue scale (VAS) | 7.25 | 0.716 | 3.75 | 0.716 |

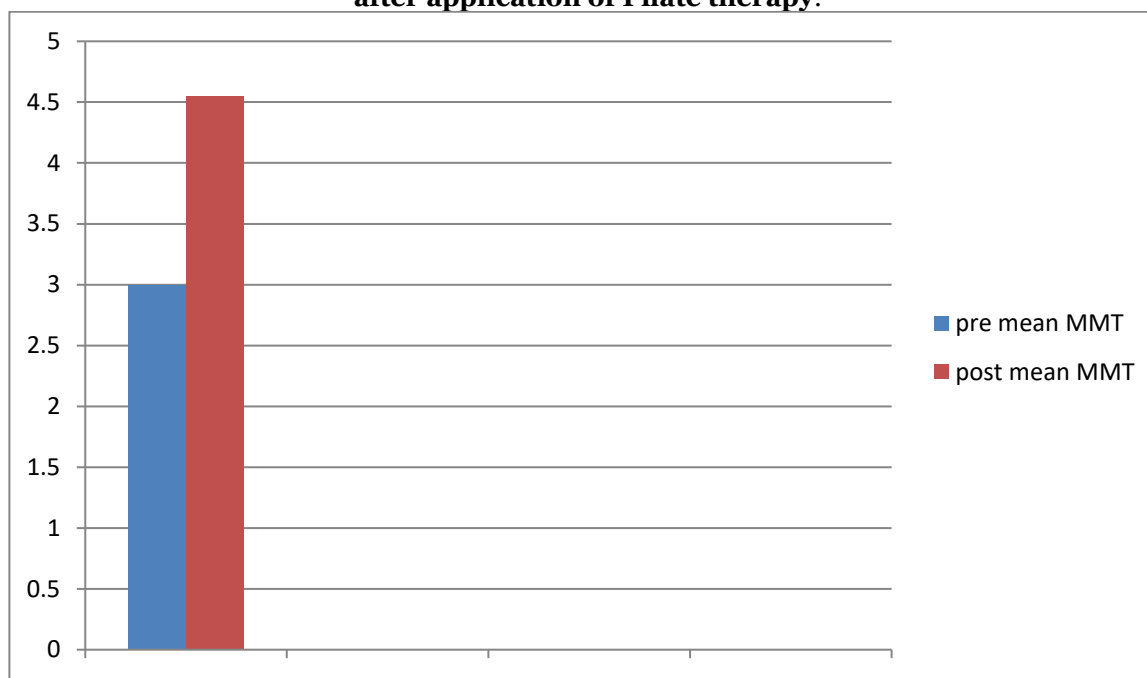
Table 1: Showing difference in mean and standard deviation for back pain after application of Pilate therapy.



Graph 1: difference in back pain pre and post treatment with Pilate therapy.

2. Abdominal muscle strength with MMT

| Sr no | Outcome measure | Pre | | Post | |
|-------|------------------------|------|----|------|------|
| | | Mean | SD | Mean | SD |
| 1 | Manual muscle strength | 3 | 0 | 4.55 | 0.51 |

Table 2 :Showing difference in mean and standard deviation for abdominal muscle strength after application of Pilate therapy.**Graph 2 : Difference in abdominal muscle strength pre and post treatment with pilate therapy.**

Discussion:

A pilot study was undertaken to find out the influence of Pilate therapy on back pain in post natal women. Total 20 subjects were included. Subject received Pilate therapy for a period of 6 weeks. Pilate therapy works on various principles which might have thought to cause improvement by reducing pain and increasing muscle strength.

- Use of mental focus to improve movement efficiency and muscle control.
- Awareness of neutral spine alignment, or proper posture, throughout the exercises.
- Development of the deep muscles of the back and abdomen to support this posture.
- Use of breath to promote mental focusing and centering.
- Creating, length, strength and flexibility in muscles.

Working on above principles patient specific exercises were designed which might have played a significant role in patient's outcome. Fundamentals used in various exercises were Concentration, Control/precision, Centering, Stabilizing, Breathing Alignment, Fluidity Integration. Pilate therapy is targeted specifically on core muscles of spine which specifically undergoes tremendous changes during pregnancy. Physiological and hormonal changes cause them to become painful and weak. As pilates uses the above principles it might have shown to improve anatomical parameters of the muscles thereby making them strong and pain free. As the exercises were subject specific, the patients were easily distinguished in terms of impairments and so goal specificity and it means could be set and achieved in a proper manner. Pilate-based exercise is an appropriate volume to contribute to physiological benefits on lumbo pelvic stability and improve flexibility in lower leg¹¹. Equipment based and mat Pilates modalities are both effective in the improvement of Transverse abdominals activation in patients with Chronic low back pain with associate improvement on pain, function and kinesiophobia¹². Pilates improves flexibility. It increases muscle tone and strength particularly of abdominal muscles, lower back, hip and buttocks (core muscles of the body) It is thought to balance muscle strength on both the sides of the body. This facilitates enhanced muscular control of the back and limbs.

Conclusion:

The study concludes that Pilate therapy is very effective in reducing back pain in post natal women. It significantly improves muscle strength and flexibility of abdominal muscles.

Conflict of interest:

There is no conflict of interest.

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Ethical clearance:

The study has clearance of ethical committee from Krishna Institute Of Medical Sciences Deemed To Be University, KVV, Karad (0188/2017-18)

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