

A Study to Analyze the Effectiveness of Postnatal Exercise in Improving Functional Status on Caesarean Women

G. Vaishnavi¹, K. Kirupa², C. J. Jayson³, R. Vidyalakshmi⁴

Faculty of Physiotherapy, Dr. M. G. R Educational and Research Institute, Velappachavadi, Chennai, India

Abstract: Research Design: Randomized control trial. Population for the Study: Female with the age group of 22-35 years who has undergone a caesarean delivery. Sample Size and Sampling Method: From the population 40 subjects were taken and divided in to two groups, each group contains 20 members. Study Setting: Study was conducted on Department of Physiotherapy ACS General Hospital. Variables of the Study: Dependent variable- Inventory of functional status after childbirth. Independent variable- Exercises. Criteria: Inclusion Criteria: 1) Subjects with caesarean delivery. 2) Subjects with age group of 22-35. 3) Referred from obstetrics department. Exclusion Criteria: 1) Subjects with vaginal delivery, forceps, vacuum Extraction delivery. 2) Subjects with age group beyond 35. 3) Subjects with cardiovascular complications. 4) High risk pregnancy. 5) Subjects with musculoskeletal complications. Materials Used: 1) Couch 2) Pillow 3) Towel 4) Mattress. Tools for Data Collection: Inventory of functional status after childbirth scale. Conclusion: Exercise program was significantly effective in to ring the functional status.

Keywords: Caesarean Women, Inventory Functional Status, Postnatal Exercise

1. Introduction

Postnatal means post meaning “after” and natal is meaning “of birth” is the period beginning immediately after the birth of the child and extending for about six weeks. A more correct term would be postpartum period, as it refers to the mother whereas postnatal refers to infant. Less frequently used in puerperium. **Biologically**, it is the time after birth, a time in which the mothers body, including hormone level and uterus size, returns to pregnancy conditions. Lochia is postpartum vaginal discharge, containing blood, mucus, and placental tissue. During the first stages of this period, the new born also starts his/her adaptation to extra uterine life, the most significant physiological transition until death. In this period that the new mothers body begins its period of recovery and its return to normal. The pregnancy process will results a various change of body shape and function. A term women sees Ripley swollen abdomen, enlarged breast, possibly edema of the face, ankles and hands. Although in the first few postpartum hours she may be thrilled with softness and flatness of her abdomen. As she moves, she may aware of complete lack of abdominal muscle control. Caesarean births are forever and the increase. It is the only major abdominal operation where there is little opportunity for the uninterrupted convalescence. The procedure period for them is less complicated; there was quicker re-establishment of gastrointestinal function, women takes time to carry out their functional activities. Women undergoing this procedure may be in fear of moving, incapacitated by pain and able to care for their baby only minimally.

2. Anatomy

Muscles and Ligaments

The body ligaments and collagenous connective tissue will still be softer and more elastic than pre-pregnancy and it will take 4 to 5 months for full recovery to take place. The abdominal muscles which will have been stretched and now elongated and a separation between to two recti muscles will almost certainly be apparent in any women during delivery. This can vary between a small vertical gap 2-3 cm wide and 12-15 cm long to a space measuring 12-20 cm in Width and extending the whole length of recti muscles. As a result the entire abdomen corset is weakened.

Abdominal Weakness

When the women had a caesarean section, the abdominal wall is cut and the muscles are sewn back together. This creates scarring contributes to the muscles instability to glide over the top of each other during other muscles contraction. The net result is weakness and that contributes to the lack of stabilization. This also could happen to the muscles of the pelvic floor after child birth. When the inner unit and abdominal wall becomes weak and dysfunctional, then your outer unit muscles which are used for movements (gluteus maximus) become overused and will try to stabilize the pelvic and lower back. Also when the pelvic floor is inhibited, the transverse abdominal muscle is lengthened and lordosis begins to increase. This creates a short psoas muscle and it inhibits the gluteus muscles.

OEDEMA

Many women will complain of heavy, edematous, aching legs, swollen legs and ankle in immediate postpartum period. This may be unilateral or bilateral. This cause can only by pushing during labor, pelvic congestion.

Breasts

The breast may engorge; feel hot, full and painful. Even in the axilla where a tail of breast tissues lies when lactation begins on 3rd or 4th postnatal day.

Physiological State

Physiologically a state of primary maternal preoccupation, mother's attention is fixed on her baby and she is often hypersensitive to every nuance behaviour. She will be depressed and very moody.

Postnatal Problems includes:

1. Incisional pain
2. Perineal pain

Genetourinary Dysfunction/ Pain

1. Faecal Incontinence
2. Stress incontinence
3. Constipation

Musculoskeletal Dysfunction/ Pain

1. Diastasis Recti Abdominis
2. Back Pain
3. Coccydynia

Circulatory Dysfunctiona/ Pain

1. Varicose Vein
2. Oedema
3. Deep Vein Thrombosis

3. Methodology

Research Design

Randomized control trial

Population for the Study

Female with the age group of 22-35 years who has undergone a caesarean delivery.

Sample Size and Sampling Method

From the population 40 subjects were taken and divided in to two groups, each group contains 20 members.

Study Setting

Study was conducted on Department of Physiotherapy ACS General Hospital.

Variables of the Study

Dependent variable- Inventory of functional status after childbirth.

Independent variable- Exercises

Criteria

Inclusion Criteria

- 1) Subjects with caesarean delivery
- 2) Subjects with age group of 22-35
- 3) Referred from obstetrics department.

Exclusion Criteria

- 1) Subjects with vaginal delivery, forceps, vacuum Extraction delivery.
- 2) Subjects with age group beyond 35
- 3) Subjects with cardiovascular complications.
- 4) High risk pregnancy.
- 5) Subjects with musculoskeletal complications

Materials Used

- 1) Couch
- 2) Pillow
- 3) Towel
- 4) Mattress

Tools For Data Collection

Inventory of functional status after childbirth scale.

4. Procedure

The subjects recruited for the study were selected from obstetrics department at ACS General hospital. The subjects were referred from the obstetrics department of ACS General Hospital. Once the subjects gets medially stable the exercise program was started. Based on the inclusion assessment form the subjects were selected and informed consent has taken from the subjects. The subjects were examined by the "Inventory of functional status after childbirth scale" and 60 subjects were selected initially but 40 subjects fulfilled the study. So the study population was taken as 40. The population was divided in to two Groups, Group-A and Group-B respectively. Group -A was the experimental group and Group-B was the control group. Experimental group received the postnatal exercise program and the control group received the conventional physiotherapy program. The postnatal exercise program was given exercise for a period of six weeks. The exercise program lasts for 60 minutes which includes the therapy duration and resting period. The exercise program was given for 5days a week for 6weeks. The exercise regime has 18 exercises, which includes mobility, stretching, and strengthening exercises. The exercise program used in this study works on abdominals, extensors of spine and the pelvic floor muscles. The subjects were evaluated by the inventory of functional status after childbirth scale. The data were evaluated and statistically analysed.

Postnatal Exercise program includes

Breathing Exercise, Kegels Exercise, Pelvic Tilt, Hip Rolling, Pelvic Bridging, Diagonal Curls Up, Cat and Camel Exercise, Hip Extension, Tail Waging, Lying Prone In Extension, Back Extension, Arm Lifts, hand-Knee rocking, Trunk rotation, Side Bending, Upper Back Stretch, Backward Bending, Pectoralis Stretch

Table 1: Infant Care Responsibility Subscale

GROUP	PRE-TEST	POST-TEST
GROUP A	14.35	21.97
GROUP B	11.3	16.85

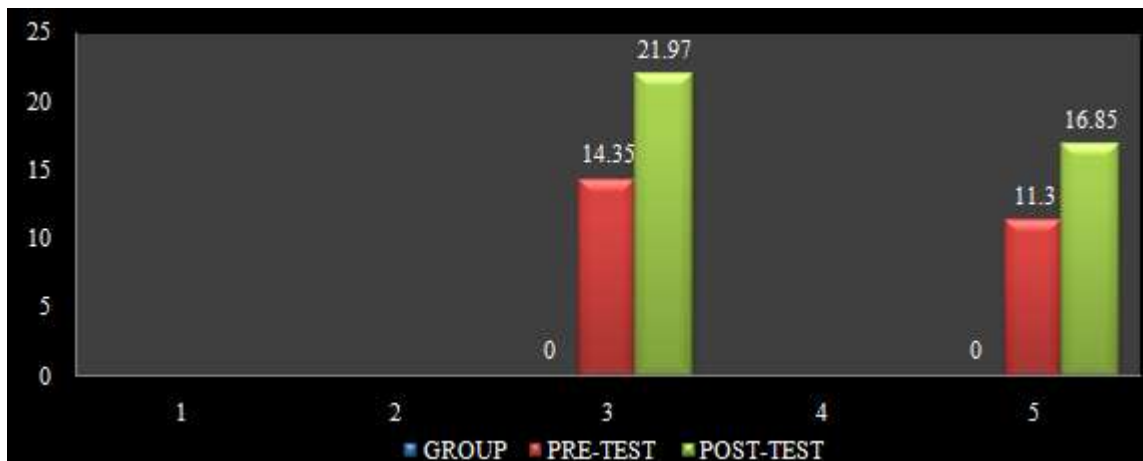
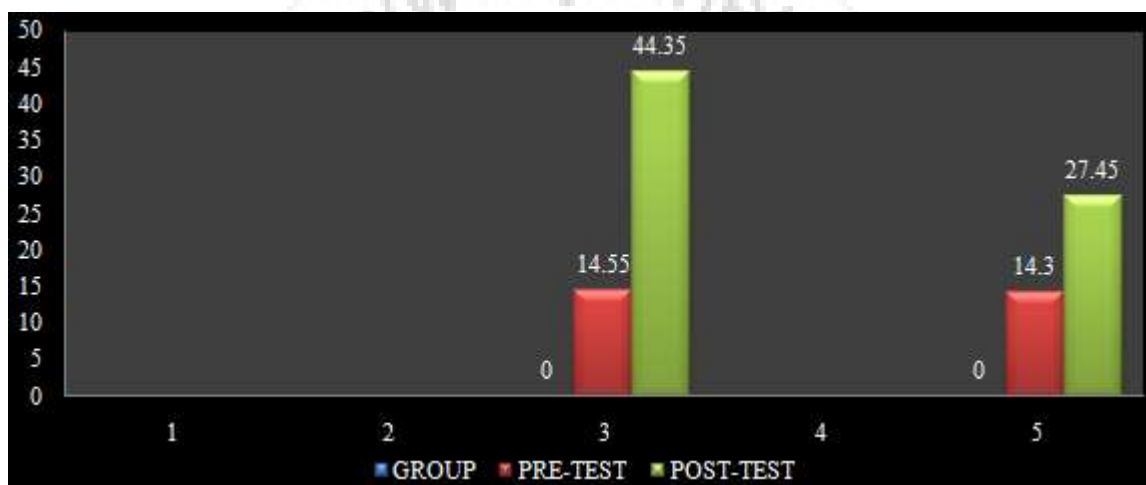


Table 2: House Hold Activities Subscale

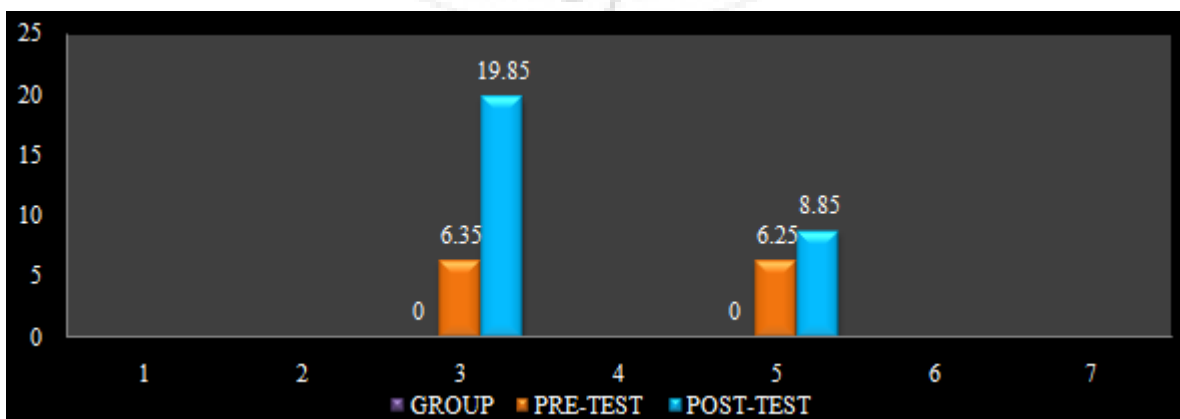
GROUP	PRE-TEST	POST-TEST
GROUP A	14.55	44.35
GROUP B	14.3	27.45



House Hold Activities Subscale

Table 3: Social and Community Activities Subscale

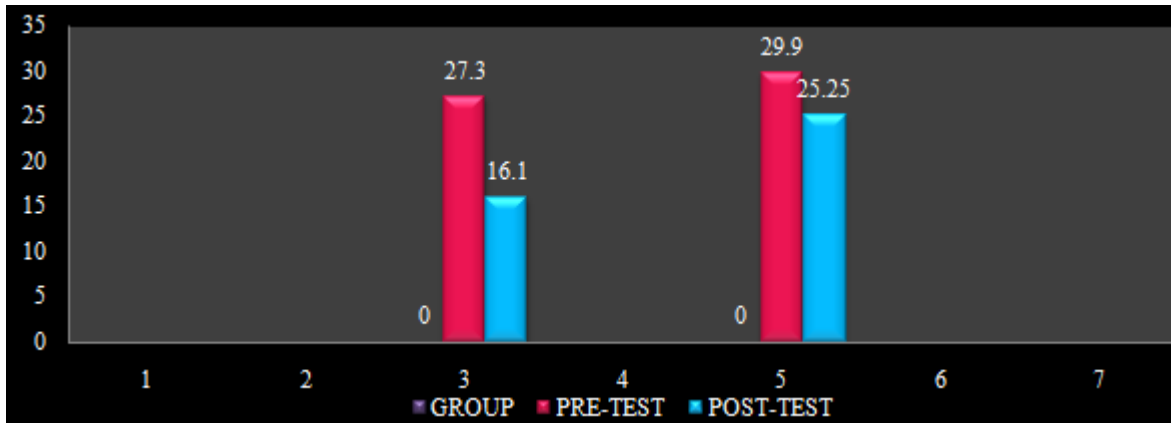
GROUP	PRE-TEST	POST-TEST
GROUP A	6.35	19.85
GROUP B	6.25	8.85



Self Care Activities Subscale

Table 4

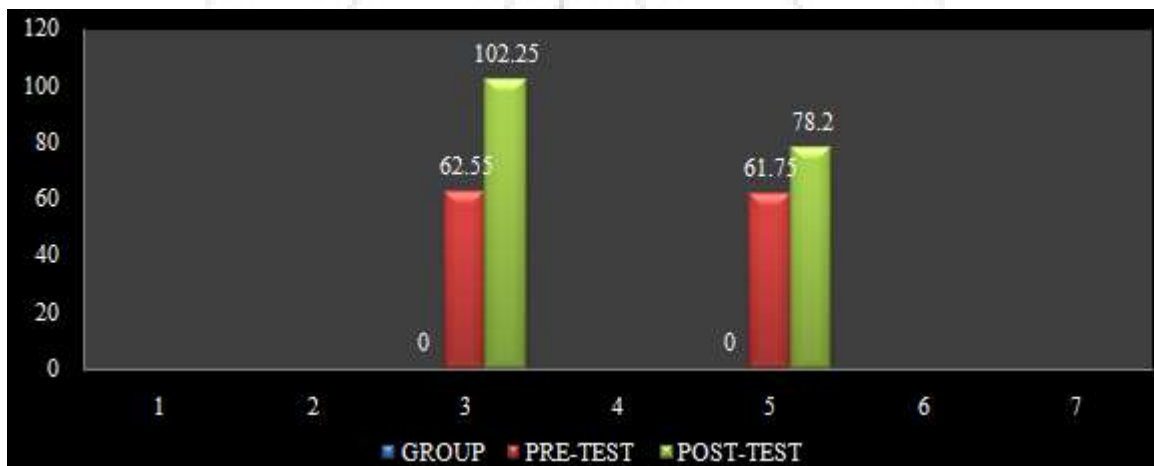
GROUP	PRE-TEST	POST-TEST
GROUP A	27.3	16.1
GROUP B	29.9	25.25



Total Inventory of Functional Status after Childbirth

Table 5

Group	Pre-Test	Post-Test
GROUP A	62.55	102.25
GROUP B	61.75	78.2



5. Discussion

This study aimed to analyse efficacy of postnatal exercise program on subjects with caesarean delivery. On analysing the data's we can observe that there was significance difference between the pre and post test values in the both groups. There was also a significant difference the post test values of group-A and group-b. When compared group B and group-A the experimental group-A shows significant. This ensures the effective ness of postnatal exercise program. Table-1 Shows the results of "Infant Care Responsibility Subscale". There was a significant difference between pre and post test values of group-A and group-B. Since group-A was the experimental group, they had a highly significant post test values when compared to group-B. CMED in 2001 suggested that women's health Physiotherapist educate her exercise to assist women to maintain function and care for her baby. Table-2 Explains the results of "Household Activities Subscale". There was a

significant difference between pre and post test values. There was highest significant difference between the post test values of group-A and group-B. This shows that the subjects in group a was able to do the household activities very early and efficiently. Table-3 elaborates the results of "Social and Community Activities Subscale". There was a significant difference between pre and post test values in group-A. MURRAY AND HOLDCRAFT in 2000 showed the 80% of primiparous women and 50% of multiparous women complained of discomfort after delivery. Physiotherapy exercises relieve their discomforts in 40% of primi and 60% in multi parous women. MAC ARTHUR ET AL in 2001 says that the new mother resumed has everyday routines after several months, they should participate in exercise program to carry out the early functional activities. Table-4 Analysed the results of "Self Care Activities Subscale". It shows a significant difference between pre & post test values of group-A. Noble E in 2002 suggested the essential things of postnatal

exercise in improving the function. Hence there was significant results in Group-A. Group-B had conventional Physiotherapy program which made them to improve in function. It includes breathing exercise, kegels exercise and pelvic bridging which are basic exercise regimes given to the postnatal women. Table-5 Analysed the results of “Total Inventory of Functional Status after childbirth”, this shows a significant difference between pre & post test values of group-A. The control group did not get significant results in between the pre & post test values, they also be considered. But when compared to group-A it has a less significant difference.

6. Conclusion

This exercise program was significantly effective in restoring the functions. Hence I conclude that this exercise regime can be used in subjects with post caesarean section to restore function as early as possible.

Reference

- [1] TESTBOOK OF PHYSIOTHERAPY FOR OBSTETRICS AND GYNAECOLOGY by “JEANETTE HASLAM” and “SUE BARTON”.
- [2] TESTBOOK OF MIDWIFERY by “MYLES”.
- [3] TESTBOOK OF MIDWIFERY FOR OBSTETRICS CARE by “PAULINE MCCOLLERS”.
- [4] Article by “JESSICE HELLER PHYSICAL THERAPY, FITNESS”, on postnatal abdominal exercises.
- [5] Article by “ELIZABETH NOBLE” on Essential Postpartum Exercises.
- [6] EXERCISE IN PREGNANCY AND POSTPARTUM PERIOD by “DAVIES GA, WOLFELA” MOTTOLA MF, MACKINNONC, ARSENAULT, BARTELLAS E”.
- [7] Article by “WEST WILLSHIRE” on Regaining your fitness after caesarean birth.
- [8] REDUCING POSTPARTUM WEIGHT RETENTION by “KINNUNEN TI, PASSANEN M, AITTASALO M, and FOGELHOLM”.
- [9] WEIGHT MANAGEMENT INTERVENTION FOR POSTPARTUM WOMEN by “KUHLMANN AK, DIETZ PM, GULAVOTTIC, ENGLAND LJ.
- [10] POSTURAL HEALTH IN WOMEN- ROLE OF PHYSIOTHERAPY by “BRITNELL SJ, COLE JV, ISHERWOOD L, SRAN MM”.
- [11] UROGYNAECOLOGICAL PROBLEMS IN PREGNANCY AND POSTPARTUM SEQUELAE by “PANAYI DC, KHULLAR V”