

Qualitative Study on Effect of Core Strengthening Exercises to Maximizing Physical and Mental Recovery in the Post-Partum Period

Dr. Tapasya Tomar¹; Dr. Mamta Vyas^{2*}
Sri Satya Sai University of Technology and Medical Sciences, Sehore

Corresponding Author:- Dr. Mamta Vyas^{2*}

Abstract:- The postpartum period for any women is a very critical time for new mothers, both physically and mentally. Physical recovery plays a very important role particularly in core strength for overall wellbeing function and recovery. This aim of this study is to explore the effect of core strengthening exercises during postpartum period for physical and mental wellbeing, with inclusion criteria focusing on women who had normal deliveries and are under 30 years of age. As qualitative methods are applied in this research, including interviews and focus groups. here, we explore the experiences of new mothers engaging in a structured core strengthening program for extended period. Results suggested that such core strengthening exercises positively influence not only physical recovery, such as improved posture and reduced lower back pain, but also contribute to mental well-being by enhancing confidence, reducing anxiety, and promoting a positive body image. A total 50 women, under the age of 30 and six months postpartum following normal vaginal deliveries. After interview-based questions, we assess weak core muscle after post-delivery then provide supervised core strengthening exercises three times a week for 12 weeks, each session last for 30 minutes. Exercise includes Pelvic tilts Planks Leg raise Bridge exercise Abdominal crunches.

This study shows, after 12 weeks of core strengthening exercise regime women shows significant improvement in postpartum recovery with benefits extending both physical and mental recovery.

Keywords:- Postpartum Recovery, Core Strengthening, Physical Rehabilitation, Mental Health, Qualitative Research.

I. INTRODUCTION

The postpartum period starts as baby delivered after full term of pregnancy i.e third trimester, soon after delivery phase is referred to as the "fourth trimester," this time is very transformative phase in a woman's life marked by physical, emotional, social and mental challenges. During pregnancy women wear a child in their womb for 9 months and she gains a lot of weight this weakened her core muscle very weak, here we seen many women's those are undergoes vaginal or

normal delivery they frequently experience certain issues like weakened core muscle, disturbed sense of body awareness, poor posture and lower back pain due to weak core. core stability exercises have been widely advocated for management of patients with different musculoskeletal conditions, even though its effects on postpartum lumbopelvic pain [1]. These physical challenges can extend to mental health concerns too, such as postpartum depression and anxiety is frequently seen after post-delivery [2]. Many studies suggest that women in India are more physically inactive than their male counterpart and have a higher prevalence of physical inactivity as compared to western women [3]. Strengthening the core muscles can play a pivotal role in optimizing physical and mental recovery in this critical period. This study investigates the effect of core strengthening exercises for both physical recovery and mental well-being in women under aged 30 years who have had normal deliveries.

II. REVIEW OF LITERATURE

➤ Pelvic Floor Dysfunction:

Every woman needs to know about the importance of the function of pelvic floor muscles and pelvic organ prolapse prevention, especially pregnant women because parity and labor are the factors which have the biggest influence on having pelvic organ prolapse in the future. [4]

➤ Postpartum Physical Changes:

Although physical problems typically associated with the postpartum period are often regarded as transient or comparatively minor, we found that they are strongly related to both the functional impairment and poor emotional health of the women in our study sample. In brief, the evidence presented here strongly suggests that postpartum physical health problems are common, salient, and cumulative, and negatively influence the quality of life of women following parturition. In addition, the results suggest that clinical assessments which include the physical, functional, as well as emotional health status of women in the year following childbirth have a greater potential to identify the range of problems related to childbirth, and thus improve the overall quality of care available to postpartum women. In brief, the evidence presented here strongly suggests that postpartum physical health problems are common, salient, and cumulative, and negatively influence the quality of life of

women following parturition. In addition, the results suggest that clinical assessments which include the physical, functional, as well as emotional health status of women in the year following childbirth have a greater potential to identify the range of problems related to childbirth, and thus improve the overall quality of care available to postpartum women. [5]

➤ *Mental Health in the Postpartum Period:*

Postpartum support is recommended to prevent infant and maternal morbidity. This review examined the published evidence of the effectiveness of postpartum support programs to improve maternal knowledge, attitudes, and skills related to parenting, maternal mental health, maternal quality of life, and maternal physical health. [6]

➤ *Role of Core Strengthening:*

In this study, stated that the effects of exercise with Swiss ball and mat in the postpartum women for abdominal strengthening. Weak abdominal muscles may also have a role in the pathogenesis of back pain after pregnancy. Strengthening of the abdominal muscles and good physical fitness reduced the incidence of lower back pain. Women who exercise during the postpartum period are more likely to have positive moods, less anxiety and depression, and increased vigor following exercise. Sleep disturbances in postpartum women commonly result in feelings of fatigue and a diminished amount of energy. Fatigue may be a major deterrent to return to functional ability however, exercise may help to improve psychosocial well-being and increase feelings of energy. The result stated that the swiss ball and mat exercise is equally effective in strengthening core muscles in postpartum women. The sample size was small only normal delivery subjects were included both primigravida and multigravida were included; absence of control group. [7]

➤ *Components of Postpartum Care*

• *Physical Activity:*

Physical activity is very important component for postpartum recovery of women. The World Health Organization (WHO) recommend at least 150 min per week moderate intensity aerobic exercise is recommended for better recovery such exercises are called Postnatal exercises includes gentle stretching, walking, strengthening exercises. Various form of Pilates is also helpful in Postpartum recovery.

• *Back Pain Care:*

During second and third trimester, size of uterus expands it alter posture and make core muscles weak, this will create extra pressure and strain on back muscles. If women is putting focus on postpartum exercise including core strengthening this will help to reduce back pain after delivery.

• *Vaginal Pain:*

Vaginal pain is also called as afterpains. Soon after delivery uterus starts contract and relax as it shrinks back to normal. Such pain is feels like labor contraction or like menstrual cramps. it can be managed by gentle massage, gentle stretching, NSAIDS, hot water fomentation or bath.

• *Pelvic Floor Dysfunction:*

Pelvic floor dysfunction is very common after delivery specially after vaginal delivery. excessive pressure is exerted on levator ani muscle due to weight of child and relaxin hormone also play an important role to relax muscle and ligament which makes delivery easy while pushing child out during the phase of delivery but in long term it will affects the pelvic floor muscle, this leads to PFD. This can be treated by pelvic floor strengthening exercise immediately after delivery like Kegel exercises.

• *Mental Stability:*

Baby blues, postpartum depression, mood disorder, anxiety and irritability effects on their mental stability to cope with new responsibilities. Sometimes it called peripartum depression because it can start during pregnancy and continue after children. Proper mental health counselling, family support can prevent from serious mental disorders like psychosis.

• *Nutrition :*

Post partum recovery is very necessary for both mother and child , this will happen after taking good nutrients in diet . The principles of healthy eating remain the same for all adults, and it is important that GPs support women to consume a wide variety of unprocessed, nutritious foods. Breastfeeding mothers require additional energy and nutrients such as protein, iodine, vitamin B12 and vitamin D, which are important in supporting healthy function and infant growth through breastmilk. GPs must take a person-centred approach to consultations, use respectful language and consider practical recommendations to support women in this exciting yet challenging time [8]. New mother is breastfeeding, a healthy balanced diet is necessary for recovery. During first few weeks blood building nutrients vitamin B 12 and folate is important for post-delivery mother for recovery.

• *Breastfeeding:*

Breastfeeding has various health benefits for both mother and baby both. breast milk provides a ideal nutrients to baby which support growth and development to baby. It also protects the baby and mother from certain illness and diseases. Breast milk contains various antibodies which keep the baby healthy.

Education regarding newborn care such as bathing, breastfeeding, importance of immunization, umbilical cord care etc.

➤ *Concern Issues*

• *Postpartum Blues :*

Postpartum blues are also known as baby blues . This is a common condition that affects many new mothers. It is characterized by a low mood, mild depression (which last up to two weeks or a year). It is caused due to sudden decrease in estrogen and progesterone levels after delivery, drop in thyroid hormone level, not taking proper diet or nutrition, not getting proper sleep, anxious about new born baby care.

Postpartum blues symptoms include: mood swings, crying, anxiety, difficulty in sleeping. Postpartum depression is a crippling mood disorder, historically neglected in health care, leaving mothers to suffer in fear, confusion, and silence. Undiagnosed it can adversely affect the mother–infant relationship and lead to long-term emotional problems for the child. This article differentiates postpartum depression from other postpartum mood and anxiety disorders and addresses these aspects of postpartum depression: symptoms, prevalence, risk factors, interventions, and the effects on relationships and child development. Instruments available to screen for postpartum depression are also reviewed. [9]

Mental health counselling, family support, proper sleep, nutrition can help new mother to overcome from such postpartum blues.

- *Weak Muscles:*

Muscle weakness is very common problem seen in postpartum women's due to hormonal changes, weight gain, less physical activity during pregnancy, lack of nutrient and protein intake along with muscle weakness, here is a possibility of nerve damage after childbirth which can cause muscle weakness or numbness in leg last for few weeks. Another common problem is Diastasis recti, this condition occurs due to weak rectus abdominis muscle which create muscle separation in pregnancy, normally it will go back to normal shape after few weeks but if it remain same then it needs proper pelvic floor rehabilitation which includes core strengthening exercises and breathing exercises.

- *Poor Posture:*

Post partum mothers can experience poor posture, this is very common problem. Posture gets disturb, as belly get expands, this will shift the center of gravity forward which can lead to pelvis tilt and arch the lower back known as lordosis. Pelvic floor muscles can undergo changes after delivery, which can also affect posture. Poor posture leads to various issues like shoulder pain, headache, weak core muscle, organ prolapse, pinching pain in groin, round shoulder, weak upper body, difficulty in engaging the glute muscles.

Such condition is treated by physiotherapy by providing proper exercises and postural correction management.

- *Lordotic Gait:*

Bio mechanics of gait is disturbed after delivery which can persist more than 5 years after the childbirth. As a fetus grow, a variety of changes appear in a pregnant women's body. The thoracic and lumbar spine curvature change, pain in the low back and pelvic region can increase, and the balance and gait pattern can also change. Due to lordotic posture, women experience low back pain, lumbo pelvic region pain etc .

- *Obesity:*

Women get obese after delivery, but it gets start increasing after women get pregnant. Post partum weight gain can be caused by a number of factors, including:

- ✓ Weight before pregnancy
- ✓ Gestational weight gain
- ✓ Stress
- ✓ Postpartum thyroiditis, postpartum depression and type 2 diabetes.
- ✓ Disturbed sleep

Obesity can be managed by taking proper sleep, enough rest, eating high fiber food, taking balanced diet, controlling any underlying disease, doing regular and moderate exercises.

- *Urinary Incontinence:*

Urinary incontinence is very common problem seen in postpartum women; it is common after childbirth. Factors that can increase the risk of incontinence after childbirth includes types of delivery, birth weight, age, number of babies etc. It is due to weak pelvic floor muscle, but there are many ways to treat it:

- ✓ Lifestyle modification
- ✓ Kegel exercises: this exercise can help strengthen the pelvic floor muscles that control frequent urination.

- *Weak Pelvic Floor Muscles:*

The pelvic floor can be weak by pregnancy, multiple childbirth, childbirth, obesity, constipation, lower level of estrogen. weak pelvic floor muscle can cause a variety of women health issues. sign and symptoms of weak pelvic floor muscle is urine leakage and stool leakage. this can be treated by Kegel exercises pelvic floor strengthening exercises.

III. METHODOLOGY

➤ *Participants*

A qualitative approach was done for this study, focusing on in-depth interviews and thematic analysis.

➤ *The Inclusion Criteria included Women who:*

- Women under 30 years of age
- Normal vaginal delivery
- No complication during delivery
- 6 Months postpartum
- Engaged in a core strengthening program within the first six months postpartum.

➤ *Exclusion Criteria*

- Women with cesarean section
- Post partum complications
- Women age not more than 30 years

➤ *Study Design:*

This qualitative study employed semi structured interviews and focus group discussions to collect in depth data of postpartum women.

➤ *Participants were Divided into Two Groups :*

- Intervention Group (n = 25) – Received core strengthening exercise program for 12 weeks
- Control Group (n= 25) – does not receive any core strengthening exercise program.

➤ *Exercise Protocol:*

- Pelvic tilts
- Planks
- Leg raise
- Bridge exercise
- Abdominal crunches

➤ *Data Collection:*

Data were collected through:

- One-on-one interviews, those participants are willing to shared their experiences of engaging in the core strengthening exercises.
- Focus group discussions, which provided a platform for collective experiences and allowed for a deeper understanding of the shared aspects of recovery.
- Individual interviews and focus group discussions at three aspects: before the intervention, after 6 weeks and at the end of 12 weeks.

Functional based questions are designed for post-partum care focusing on their physical and mental challenges.

➤ *Physical Functioning*

- Abdominal and core strength (by performing planks and abdominal crunches)
- Pelvic floor function (by asking question like frequency of urination, control over urination, by assessing posture)

➤ *Mental Wellbeing*

- Mental stability and coping (by asking any episode of mood swing, anxiety, less interest, disturbed sleep, disturbed appetite)
- Body image (feeling any inferiority complex, avoiding any social gathering, less confident)

➤ *Activities in Daily Life*

- Daily routine (not focused, unable to start a day, unable to do daily chores)
- Level of energy and fatigue (feeling tired all over the day, feeling tired at the end of the day)

IV. FINDINGS

➤ *Physical Recovery:*

- Improved Posture: Participants shows a significant improvement in posture, decrease back pain, and increased abdominal strength.

- Pelvic Floor Recovery: many women show that core exercises helped them to regain pelvic floor strengthening, reducing issues like urinary incontinence.

➤ *Mental Well-being:*

- Increase Confidence: Many participants in this research expressed that the physical recovery facilitated by core strengthening exercises contributed to an overall increase in self-esteem.
- Reduction in Anxiety: Women also reported a reduction in anxiety and stress. This will attribute the sense of control over their physical recovery.
- Body Image improved: Engaging in programed exercises helped the participants to develop a more positive relationship with their postpartum bodies, to accept the bodily changes.

V. DISCUSSION

The findings of this study indicate that significant role core strengthening exercises play in postpartum recovery. these exercises also help to improve physical functions such as posture and muscle tone, but they also contributed to psychological benefits, like reduced anxiety, mood swings and increase self-confidence. The results of this studies suggesting that physical activity is a powerful tool for improving mental health in the postpartum period. In these studies, intervention group shows remarkable results after performing pelvic tilt exercises to make the muscle of stomach and buttocks stronger than before, it also helps in maintaining good posture. The purpose of this study was to test the effectiveness of a pelvic (hip) tilt exercise in relieving ligament pain during pregnancy. A multiple pain measurement approach was used. The intensity of ligament pain was decreased as indicated by scores on three of four pain intensity measures. The duration of ligament pain also was reduced, although not significantly. Mean scores on all measures of ligament pain intensity, duration, and frequency were lower after the exercises were Initiated. Verbal reports from subjects indicated that they had received effective pain relief from the exercise. Thus, pelvic (hip) tilt exercise appears to be effective in reducing ligament pain intensity and, to a lesser extent, pain duration. As a nurse-midwifery strategy, this exercise promotes patient/client comfort and facilitates self-care in the relief of ligament pain during pregnancy [10]. secondly, leg raise exercises are also help in strengthening the core muscle, hip and lower back. next plank exercises show a tremendous change in tone of the muscle which is lost after delivery in women's but it is contraindicated in condition like diastasis recti. Bridging exercises shows a strengthening in core muscle which promote stability in core and hip. bridging is very ideal exercise in normal delivery, it shows changes in core, pelvic floor muscles and gluteus muscles Trunk bridging exercises are often used as therapeutic exercises for lumbopelvic stabilization. These exercises focus on the retraining of muscle coordination patterns in which optimal ratios between local segmental stabilizing and global torque producing muscle activity are assumed to be essential. However, a description of such ratios is lacking. The purpose of this study

was to investigate both relative (as a percentage of maximal voluntary isometric contraction) muscle activity levels and ratios of local to global muscle activity, during bridging stabilization exercises [11]. Lastly abdominal crunches show positive result in transverse abdominal muscle and improve posture. However, this study highlights the specific contribution of core strengthening in both physical and mental recovery, in this research core strengthening exercises shows significant changes in correcting postural faults, this help in gait balance which give positive body attitude, also core muscle strengthening help in reducing back pain issues, this promote significant changes in post-partum recovery in respect of physical and mental wellbeing, a relationship that has been underexplored in past research. however, the abdominal crunch has also been used to assess abdominal muscle strength and endurance in women during the postpartum period. More recently, performing an abdominal drawing-in exercise, which includes activation of the transversus abdominis, has been recommended for both the general population and women during pregnancy and after childbirth. It has been proposed that transversus abdominis muscle activation may protect the linea alba and help to prevent or reduce DRA. [12]

VI. LIMITATIONS

This study shows valuable insights, but it has limitations. The sample size was relatively small, and the study focused only on women under the age of 30 years who had normal deliveries. Future research could include a more diverse population like women age will be more than 30 years including women with cesarean sections also.

VII. CONCLUSION

Core strengthening exercises serve as a powerful tool in maximizing both physical and mental recovery in the postpartum period in women life. This qualitative study reveals that not only physical benefits, core exercises promote mental well-being, boosting confidence and reducing anxiety in new mothers. Rehabilitation center and health care provider can do focus on holistic approach for post-partum women recovery including physical and for mental wellbeing.

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