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Anxiety, Body Image, Kinesiophobia And Percieved Benefits And Barriers Of Exercise In Post-Partum Women : A Comparative Study Between Vaginal Delivery And Cesarean Section

[1]Jhalak Ranka, [2]Sayali Rasal

[1]Intern, [2]Assistant Professor

[1,2]Department of Physiotherapy

[1,2]DY Patil (deemed to be) University, School of Physiotherapy

Abstract: There are several anatomical and physiological changes that occur in the cardiovascular, respiratory, musculoskeletal, hormonal and nervous system during the course of pregnancy and post-partum. The new mother is constantly looking after her child which may cause her to neglect her own physical health and mental wellbeing. Thus, it is important to understand the trend of anxiety, body image, kinesiophobia and the perception towards exercise in women who have undergone vaginal delivery versus Cesarean section delivery to help plan holistic treatment interventions for these new mothers. This cross-sectional comparative study was conducted with 84 post-partum women (42 having undergone vaginal delivery and 42 having undergone LSCS). The study included primiparae women postpartum up to 6 months, between age group of 18-35 years and those who were able to read and understand the English language. The Hamilton Anxiety scale was used to assess the anxiety, Body Image Satisfaction Rating scale was used to assess body image issues, Tampa scale was used to assess kinesiophobia were as Exercise Barriers and Benefits scale was used to assess the perceived benefits and barriers to exercise. A higher incidence of anxiety, body image dissatisfaction, kinesiophobia and low perceived benefits and higher perceived barriers to exercises were noted in women who had undergone Caesarean section delivery as compared to vaginal delivery.

Index terms: anxiety, body image, kinesiophobia, exercise, post-partum

I. INTRODUCTION

Pregnancy causes several physiological changes and effects in a female's body. There are anatomical and physiological changes that occur in the cardiovascular, respiratory, musculoskeletal, hormonal and nervous system during the course of pregnancy [1].

There are two methods of delivery, namely vaginal delivery and caesarean section. Vaginal delivery includes three different stages of labour. The first stage starts with regular contractions that lead to the dilatation of the cervix. Contractions lead to the widening, softening and thinning of the cervix allowing the foetus to move into the birth canal. Stage two starts once the cervix has dilated completely and ends with expulsion of the foetus from the birth canal. The mother has to push the baby out and this causes a lot of fatigue. In some cases, the obstetrician might perform an episiotomy to aid the process. The third stage begins after expulsion of the foetus and ends with expulsion of the placenta and membranes [2]. On the other hand, a C-section or

a caesarean section delivery is a surgical procedure used to deliver the baby. In this procedure, the mother is put under anaesthesia. The obstetrician will then make an incision (transverse or vertical) through the skin and fascia of the abdomen and then into the wall of the uterus. The baby is then carefully removed out along with the umbilical cord and the placenta. The incisions are then closed with stitches. This procedure carries more risk than a vaginal delivery and the recovery period is longer [3].

The postpartum period, starts one hour after the delivery and extends up to 42 complete days postpartum. It is a critical phase for the new mother and her new born. This phase can be accompanied by a range of postpartum complications, including excessive or prolonged postpartum bleeding, breastfeeding problems, urinary incontinence, constipation, depression, psychoses, post-traumatic stress disorder, anxiety, fatigue and sleep disorders. [4].

In this period, mothers must learn about their new roles, establish communication with the baby, take care of the baby and cope with the problems related with the baby. Majority of women can adapt to the physiological, psychological and social changes arising with pregnancy and delivery while some women experience mental problems to a low, moderate and high extent. Among these problems, particularly anxiety and depression could have negative effects on women during the delivery and postpartum period. Lack of appropriate care and management of post-partum symptoms, may lead to deleterious consequences to the mother and the child, even resulting in maternal morbidity and mortality. [5]

In pregnancy, women often report a reprieve from body image pressures however, after childbirth this reprieve typically dissipates. Once pregnancy is complete, there can be intense pressure to 'bounce back' and to lose weight quickly. As a result, body-related distress can be high, particularly as body changes after pregnancy (such as shifts in stomach and breast size) are often unexpected and uncontrollable. The existence of body dissatisfaction in the postpartum period is concerning as it has been associated with a range of adverse outcomes, including disordered eating, higher body weight, poorer mental health, non-breastfeeding status and fewer immediate family relationships. [6]

Exercise is a potential non-pharmacological therapy. Postnatal exercises are beneficial in contributing to physical and mental health of the mother. They help to restore muscle strength, improve cardiovascular health, boost energy, promote weight loss and a sense of wellbeing. Exercise of the pelvic floor muscles in the perinatal period is an effective method for preventing postpartum urinary incontinence. Postpartum women are a risk group for the development of urinary incontinence due to the imbalance of forces between the abdomen and the pelvis. Pelvic floor physiotherapy is a useful treatment in this population. A supervised physiotherapy program during and after pregnancy has shown to improve health-related quality of life [7].

The fear of physical activity causing pain increases immobility in postpartum females and eventually leads to decline of mental health. Chronic pain often results in further limitation of daily activities due to the anticipation of pain which aggravates depressive symptoms, immobility or misuse. The fear of pain leading to fear of movement termed as 'kinesiophobia,' described as 'an excessive, irrational and debilitating fear of physical movement and activity resulting from a feeling of vulnerability to a painful injury or a new injury' Thus, promotion and awareness of postpartum exercise and physiotherapy is important in new mothers [8,9].

For the mother, her baby is the centre of attraction at all times. She is constantly looking after her child which may cause her to neglect her own physical health and mental wellbeing. Exercise therapy has shown a lower documentation of incidences of postpartum complications such as stress urinary incontinence, pelvic floor dysfunction, diastasis recti, back pain, poor posture, depression and anxiety. However, it has not been studies if mothers who have undergone vaginal delivery and those with caesarean section delivery, react differently and have different perceptions to exercise therapy.

Therefore, the need for this study was to understand the trend of anxiety, body image, kinesiophobia and their perception towards exercise that will help in planning a holistic treatment intervention for the new mothers.

II. METHODOLOGY

After obtaining the approval from the Research Advisory Committee, this cross-sectional comparative study was conducted with 84 post-partum women (42 having undergone vaginal delivery and 42 having undergone LSCS) over a duration of 6 months (September 2023 – February 2024). The study included primiparae women postpartum up to 6 months, between age group of 18-35 years and those who were able to read and understand the English language. Multiparae women, those who had undergone any other surgical intervention along with LSCS or vaginal delivery and those who had attended antenatal classes were excluded from the study. Written informed consent was taken from each woman participating in the study. The Hamilton Anxiety scale was used to assess the anxiety, Body Image Satisfaction Rating scale was used to assess body image issues, Tampa scale was used to assess kinesiophobia were as Exercise Barriers and Benefits scale was used to assess the perceived benefits and barriers to exercise. All the scales are reliable and valid outcome measures for the study population. [10-13]

III. RESULTS

Table 1: Demographic data of study population

Group	n	Age (years)	BMI (kg/m^2)
Vaginal delivery	42	26.74 ± 2.77	26.51± 2.63
Caesarean section delivery	42	24.98 ± 1.51	24.72 ± 2.91

The study participants were divided into two equal groups. Group 1 consisted of 42 females who had undergone vaginal delivery with mean age 26.74 ± 2.77 years and mean BMI of 26.51± 2.63 kg/m^2. Group 2 consisted of 42 females who had undergone Caesarean section delivery with mean age 24.98 ± 1.51 years and mean BMI of 24.72 ± 2.91 kg/m^2.

Table 2: Comparison of Anxiety between the groups

Hamilton Anxiety Scale Score		p value	Significant
Group - VD	Group – CSD		
14.81 ± 11.70	18.50 ± 14.21	<0.0001	Yes

On the Hamilton Anxiety Scale, the mean score of females who had undergone vaginal delivery was 14.81 ± 11.70 whereas of females who had undergone Caesarean section delivery was 18.50 ± 14.21 with p value <0.0001 indicating a significant difference between the two groups.

Table 3: Comparison of Body image satisfaction between the groups

Body Image Satisfaction Rating Scale Score		p value	Significant
Group - VD	Group – CSD		
16.21 ± 6.36	14.79 ± 6.44	<0.0001	Yes

On the Body Image Satisfaction Rating Scale, the mean score of females who had undergone vaginal delivery was 16.21 ± 6.36 whereas of females who had undergone Caesarean section delivery was 14.79 ± 6.44 with p value <0.0001 indicating a significant difference between the two groups.

Table 4: Comparison of Kinesiophobia between the groups

Tampa Scale for Kinesiophobia Score		p value	Significant
Group - VD	Group – CSD		
44.21 ± 7.31	48.81 ± 9.91	<0.0001	Yes

On the Tampa Scale for Kinesiophobia, the mean score of females who had undergone vaginal delivery was 44.21 ± 7.31 whereas of females who had undergone Caesarean section delivery was 48.81 ± 9.91 with p value <0.0001 indicating a significant difference between the two groups.

Table 5: Comparison of perceived barriers and benefits of exercise between the groups

Exercise Barriers and Benefits Scale			p value	Significant
Category	Group - VD	Group – CSD		
Barriers	37 ± 8.57	45.67 ± 6.51	<0.0001	Yes
Benefits	84.90 ± 13.71	71.29 ± 18.60		

On the perceived barriers and benefits of exercise scale, the mean "barriers" score of females who had undergone vaginal delivery was 37 ± 8.57 whereas of females who had undergone Caesarean section delivery was 45.67 ± 6.51with p value <0.0001 indicating a significant difference between the two groups. The mean "benefits" score of females who had undergone vaginal delivery was 84.90 ± 13.71 whereas of females who had undergone Caesarean section delivery was 71.29 ± 18.60 with p value <0.0001 indicating a significant difference between the two groups.

IV. DISCUSSION

Evidence suggests that postpartum anxiety is relatively common among postpartum women. Anxiety meeting diagnostic criteria for a disorder represents anxiety at its most severe, distressing, and persistent form, and thus it is important to identify, understand, and treat. [14]

In this study, we found that women who had undergone LSCS had more postpartum anxiety as compared to women who had undergone vaginal delivery.

In a study of postpartum women from Maryland and Illinois, it was found that 18% of women reported experiencing postpartum anxiety symptoms since the birth of their child, and one third of them reported comorbid depressive symptoms. A higher number of stressors during pregnancy, delivering an infant at 27 weeks of gestation and smoking throughout pregnancy were associated with reporting postpartum anxiety, alone or with comorbid depressive symptoms. [15]

Women also experience dramatic physical changes in the postpartum period. Body image refers to feelings, attitudes, and evaluations of one's own body that include perceptions of the body as a whole as well as perceptions regarding specific areas of the body. Poor body image is of particular concern during the postpartum period because it has been connected with a host of negative outcomes such as increased risk of anxiety and depression and decreased perceptions of overall well-being. [16]

In this study, we found that women who had undergone LSCS are less satisfied with their body image as compared to women who had undergone vaginal delivery.

Much research has also found that exposure to certain types of media portrayals of women can be related to body image concerns. In a study, women's dissatisfaction related to body image perception were associated with loss of physical strength, weight gain, hair loss, insomnia, change of breast shape, waist/back pain, facial spots, shape change in genitals, decrease in sexual activity and sexual desire, cellulite in the legs, and constipation. [17]

In another study, body dissatisfaction was positively correlated with the symptomatology of postpartum depression. Thus, for each point increased in body dissatisfaction, the occurrence of depression also increased. There was a relationship between the study variables, so women who were more dissatisfied with their body image were more frequently depressed. [18]

Postnatal exercises are beneficial in contributing to physical and mental health of an individual. Perceived benefits of action refer to the individual's assessment of the possible gains associated with engaging in a particular health-promoting behaviour. Perceived barriers to action provide information about an individual's assessment of the potential obstacles which prevent the individual from engaging in a health-promoting behaviour. [19]

As these perceived benefits to exercise were ranked higher in those women who had gone a vaginal delivery as compared to LSCS, it suggested that although important, simply being aware of the positive benefits associated with exercise participation is not sufficient to facilitate participation in regular physical activity in postpartum women. Consistent barriers to health promotion efforts have included cost of the program, lack of awareness of fitness facilities, lack of access to fitness facilities, lack of transportation to a fitness centre and lack of knowledge of how or where to exercise. [20]

The fear of physical activity causing pain increases immobility in postpartum females and eventually leads to detoriation of mental health. Thus, promotion and awareness of postpartum exercise and physiotherapy is important. In this study, we found that women who had undergone reported to experience more kinesiophobia as compared to women who had undergone vaginal delivery.

In a study, it was found that the majority of women recover from pregnancy related lumbopelvic pain within 3 months of delivery; however, postpartum follow-up studies have shown that about 8–20% of women still have persistent non-specific lumbopelvic pain 2–3 years after delivery that interferes with daily activities.[21] Some types of lumbopelvic pain in pregnancy seem to have an increased risk of persistent pain. Having persistent pain was not found to be an important impetus for women to seek care postpartum, but merely a delay in becoming active again. A decreased activity level can lead to disability, which has been found to be closely related to fear of movement in patients with chronic lower back pain. [22]

V. CONCLUSION

Higher incidence of anxiety, body image dissatisfaction, kinesiophobia and low perceived benefits and higher perceived barriers to exercises were noted in women who had undergone Caesarean section delivery as compared to vaginal delivery.

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