



# Prevalence Study of Diastasis Recti Abdominis Among Women Following Vaginal Delivery and Caesarean Section: A Comparative Cross-Sectional Study

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## Abstract

**Background:** Diastasis recti abdominis (DRA), defined as the abdominis muscles along the linea alba, is a common postpartum musculoskeletal condition. The mode of delivery may impact both its prevalence and severity, division of rectus affecting core stability, functional capacity and quality of life.

**Objective:** To evaluate and compare the prevalence and severity of DRA among postpartum women following vaginal delivery and caesarean section.

**Methods:** A comparative cross-sectional study was conducted among 250 postpartum women (100 vaginal delivery, 150 caesarean section) between 6-12 weeks post-delivery. DRA was assessed systematic palpatory assessment at three points (2 cm above the umbilicus, at the umbilicus, and 2 cm below) and established with Finger width measurement. Severity was classified as mild (2-3 cm), moderate (3-5 cm), or severe (>5 cm). Prevalence and severity were compared between groups using Chi-square and statistical significance set at  $p < 0.05$ .

**Results:** The prevalence of DRA was statistically significantly higher in the caesarean section group (78%) compared to the vaginal delivery group (54%,  $p < 0.001$ ). Mean value inter-recti distance at the umbilicus was also greater in the caesarean section ( $3.3 \pm 0.7$  cm) than in the vaginal delivery group ( $2.5 \pm 0.6$  cm,  $p < 0.001$ ). Moderate to severe DRA was primarily identified in the caesarean section study sample, in contrast, mild DRA was more common among vaginal delivery participants.

**Conclusion:** Mode of delivery markedly impact both the prevalence and severity of DRA. Early post-delivery examination and focused core rehabilitation interventions are advised to re-establish abdominal integrity, enhance functional outcomes, and decrease prolonged musculoskeletal dysfunction complications.

**Keywords:** Diastasis Recti Abdominis; Postpartum; Vaginal Delivery; Caesarean Section; Prevalence; Comparative Study

## Introduction

During pregnancy and childbirth human body faces anatomical, physiological and biomechanical changes in a woman's body. Within many musculoskeletal modifications that occurs during pregnancy and changes in the abdominal wall, as they play an important role in posture, trunk stability, respiration and functional movement. Abdominal wall changes in the pregnancy and postnatal period are called Diastasis Recti Abdominis. DRA is defined as the gap between the rectus abdominis muscle along the Linea alba, resulting in an increased inter-recti distance. This condition is regularly observed in antenatal and postnatal women, and has become a focus of interest in recent years due to its effects on physical function, quality of life and long-term musculoskeletal health.

The rectus abdominis muscle is a primary component of the anterior abdominal wall and its play a important role in trunk flexion, stabilisation of the pelvis, maintenance of intra-abdominal pressure, and support of the lumbar spine. In pregnancy period, the growing uterus has a continuous mechanical stress on the abdominal wall, which leads to stretching and thinning of the Linea alba. Hormonal changes, particularly increased levels of relaxin, progesterone, and estrogen, play a role in connective tissue laxity. These combined factors facilitate the development of diastasis recti in

pregnancy. While the separation of the rectus abdominis is seen as a physiological adaptation during pregnancy.

Diastasis recti abdominis is commonly defined as an inter-recti distance greater than 2 cm, although variability exists in the diagnostic criteria employed across studies. Multiple methods are available for the assessment of this condition, such as finger-breadth palpation, measuring tape, callipers, ultrasound imaging, and computed tomography. From these, clinical palpation and tape measurement are commonly used in physiotherapy practice owing to their simplicity, cost-effectiveness and convenience of application in a clinical setting.

## Anatomy

DRA is most commonly assessed at three anatomical locations:

1. At the level of the umbilicus.
2. Above the level of the umbilicus.
3. Below the umbilicus.

The prevalence rate of DRA is increased during gestation, with studies indicating that nearly all women establish some degree of rectus abdominis separation in the late pregnancy period. Postnatal prevalence rate is highly variable depending on factors such as time since delivery, parity, maternal age, body mass index, mode of delivery, and assessment method used.

Although natural resolution of the abdominal wall occurs in many women during the early postnatal period, a notable percentage demonstrate DRA in a few months or even years postnatal period. DRA has been accompanied by reduced core stability, altered posture, low back pain, pelvic floor dysfunction, urinary incontinence and impaired functional performance.

The method of delivery is evaluated as an important factor determining the development and perpetuation of DRA. During vaginal delivery, the abdominal muscles are actively involved in the second stage of labour via the generation of rapid force contractions. This active involvement may promote functional recovery of the abdominal musculature in the postnatal period. Alternatively, caesarean section involves surgical incision via the abdominal wall, including the skin, fascia, and sometimes muscle layers. This operative trauma may disrupt normal muscle function, delay tissue healing and impair neuromuscular control, potentially increasing the risk of DRA.

A range of studies have advised that women who experience caesarean section may have a greater prevalence and severity of DRA compared to those who deliver vaginally. Surgical incision, postoperative pain, fear of movement, and delayed initiation of abdominal exercise are factors with a possible negative impact on abdominal muscle recovery following caesarean section. Moreover, adhesions and scar tissue formation may alter the mechanical properties of the abdominal wall, further contributing to muscle imbalance and separation. In contrast, existing literature presents mixed results, with some studies reporting no significant difference in DRA between vaginal and caesarean deliveries. These discrepancies emphasise the need for additional investigation to clarify the relationship between mode of delivery and DRA. The age of the mother is another important factor determining the occurrence of DRA. Women aged between 20 and 40 years represent the majority of the childbearing population and may demonstrate varying degrees

of structural tissue elasticity, muscle strength, and recovery potential. Advancing maternal age has been associated with reduced collagenous tissue elasticity and slowed tissue regeneration, which may put women at risk of persistent abdominal muscle separation. Understanding the prevalence and severity of DRA within this age group is essential for developing age-specific preventive and rehabilitative interventions.

The number of birth is also plays a significant role in the development of DRA. Recurrent pregnancies subject the abdominal wall to recurrent stretching, which may over stretched elastic limits of the Linea alba and rectus abdominis muscle. Women with more than one delivery are therefore considered to be at a higher risk of developing DRA compared to women with a single delivery. Additionally, factors such as high body weight during pregnancy, multiple child births, fetal macrosomia, and postural deviation may further increase the abdominal muscle separation.

From a physiotherapy perspective, DRA is of particular clinical importance due to its association with core instability and abnormal function. The abdominal muscle groups act in coordination with the diaphragm, pelvic floor muscles, and deep spinal stabilisers to form an integrated core system. Distribution within the system due to DRA impairs load transfer via the trunk and pelvis, leading to compensatory motor patterns and increased stress on the lumbar spine and pelvic structures. Consequently, women with DRA may experience reduced functional capacity, including lifting, bending, and prolonged standing. Early detection and management of DRA are essential to prevent long-term complications. Rehabilitative strategies focusing on deep core muscle activation, especially transversus abdominis, pelvic floor muscle training, postural correction, and functional retraining, have been shown to improve abdominal muscle function and reduce inter-recti distance. Successful rehabilitation planning necessitates a clear understanding of the prevalence and severity of DRA in different subgroups of postnatal women, including those based on the method of delivery.

Despite increasing awareness, DRA remains evident in the lack of large-scale comparative studies evaluating the condition in women following vaginal and caesarean delivery, specifically in the Indian population. Traditional practices, deviation in antenatal and postnatal care, and differences in physical activity levels could affect the recovery of DRA. Therefore, region-specific data are critical for guiding clinical decision-making and guiding evidence-based physiotherapy practice.

A cross-sectional comparative study design allows for the assessment of DRA prevalence and severity at a specific point in time and assists in comparing between groups. Including a large sample size, such as 200 postnatal women, strengthens the reliability and applicability of findings.

Comparing women aged 20-40 years following vaginal delivery and caesarean section provides valuable insight into the influence of delivery mode on abdominal muscle separation during the postnatal period.

## Need for the Study

DRA is a common yet underdiagnosed condition in postpartum women.

Although highly prevalence many post women do not recognise abdominal muscle separation and its implications for functional capacity and long-term musculoskeletal health.

In clinical practice, postnatal women often experience low back pain, weakened abdominal muscles, postural instability and difficulty performing routine activities, which could be linked to undertaken DRA.

Mode of delivery is an important determinant in the rehabilitation of abdominal musculature following childbirth. Caesarean section involves a surgical incision through the abdominal wall.

Recovery of abdominal muscle function may be delayed after caesarean section delivery, whereas vaginal birth requires active abdominal muscle involvement, facilitating earlier functional recovery.

Understanding whether these difference significantly influences the prevalence and severity of DRA is essential for planning an appropriate postnatal rehabilitation strategy.

In the Indian context, limited large-scale comparative studies are available that determine DRA in women following different modes of delivery.

Cultural habits and the scarcity of structured postnatal exercise protocols and limited awareness of physiotherapy-based rehabilitation further underline the importance of high-quality research in this area.

By evaluating DRA among the following vaginal and caesarean births, this study aims to generate clinically relevant data that can assess physiotherapy and healthcare professionals in early screening, prevention and rehabilitation of abdominal muscle.

Findings from this research will contribute to optimising postpartum care, designing evidence-based physiotherapy protocols and improving postnatal women's functional well-being.

## Aim of the Study

To compare the prevalence and severity of Diastasis Recti Abdominis (DRA) in postnatal women aged 20–40 years following vaginal delivery and caesarean section.

## Objectives of the Study

### Primary Objective

- To compare the prevalence and severity of Diastasis Recti Abdominis among women aged 20–40 years following vaginal delivery and caesarean section.

### Secondary Objectives

- To assess the inter-recti distance at standardised anatomical locations (above, at, and below the umbilicus) in postpartum women.
- To analyse the distribution of Diastasis Recti Abdominis based on mode of delivery.
- To evaluate the significance of initiating physiotherapy at an early stage.
- Among postpartum women with DRA.

## Operational Definitions

- Diastasis Recti Abdominis: Separation of the rectus abdominis muscles measured as an increased inter-recti distance greater than normal limits.
- Inter-Recti Distance (IRD): The distance between the medial borders of the rectus abdominis muscles measured using the

finger-breadth method or measuring tape.

- Vaginal Delivery: Normal childbirth through the vaginal canal without surgical incision of the abdominal wall.
- Caesarean Section: Surgical delivery of the fetus through an incision made in the abdominal wall and uterus.

## Hypothesis

### Null Hypothesis ( $H_0$ )

There is no significant difference in the prevalence or severity of Diastasis Recti Abdominis (DRA) between postnatal women aged 20–40 years who have undergone vaginal delivery and caesarean section.

### Alternative Hypothesis ( $H_1$ )

There is a significant difference in the prevalence or severity of Diastasis Recti Abdominis (DRA) between postnatal women aged 20–40 years who have undergone vaginal delivery and caesarean section.

## Review of Literature

### Prevalence and risk factors of diastasis recti abdominis in the long-term postpartum: a cross-sectional study

Saisai Lin

2024

Using ultrasound, researchers examined **1,000 women** between **3 and 30 years postpartum** and found that about **one in three (32.6%)** still had diastasis recti abdominis, with nearly **12%** showing more severe gaps over **3 cm**. The condition was more common in women with higher weight, multiple pregnancies, caesarean births, older age at first delivery, and those who skipped postpartum exercise. Although prevalence declined over time, DRA often persisted for decades, underscoring the need for long-term support and rehabilitation beyond the early postpartum period.

### Prevalence and risk factors for diastasis recti abdominis: a review and proposal of a new anatomical variation

M Cavalli, A Aiolfi, P G Bruni, L Manfredini, F Lombardo, M T Bonfanti, D Bona, G Campanelli

2021

Across **13 studies**, diastasis recti abdominis was reported in **27–100% of women during late pregnancy** and **30–68% after birth**, though rates varied due to inconsistent definitions. Risk factors included **multiple pregnancies, older age, heavier babies, obesity, and connective tissue issues**. The review also suggested a new anatomical twist—some women may have only a **posterior rectus sheath**, possibly increasing vulnerability. Still, differences in study design and the lack of standard tools highlight the need for more consistent, long-term research.

### Prevalence Of Diastasis Recti and Its Impact on Physical Functioning Scale in Postpartum Women

Janani Selvam, Senthil. K, Devi. S, Muhesh Padmanaban, Fathima Sulthana

2024

### Prevalence of Diastasis Recti Abdominis Among Women in the Postpartum Period

### Ihor Levytsky, Nataliia Kinash, Svitlana Ostafichuk, Nataliia 2024

A recent study of **100 postpartum women** found that about **6 in 10** had diastasis recti abdominis (DRA) within the first two months after birth, especially those with **multiple pregnancies** or **caesarean deliveries**. Women with more severe DRA scored **20–30% lower** on physical function tests, reporting more difficulty with everyday tasks like lifting, bending, and standing for long periods. While these findings highlight the impact of DRA on daily life, the study's limits—small sample size, reliance on self-reports, and no long-term follow-up—mean more research is needed to fully understand its effects.

### Analysis of diastasis recti abdominis phenotypes and related delivery factors at 42 days postpartum

#### Jingjing Guo, Lingyan Liu, Min Hua, Dong Han, Yuheng Zhou 2025

At 42 days postpartum, 458 women were assessed for diastasis recti abdominis (DRA) using ultrasound. Central separations were most common (about 62%), followed by mixed patterns (around 28%). More pronounced DRA was associated with caesarean delivery, larger babies over 3.5 kg, multiple pregnancies, prolonged second stage of labour, and maternal age above 35 years. While the study highlights the value of early ultrasound screening for tailored recovery, its single-centre design, short follow-up, and lack of functional outcome data limit broader conclusions.

### Relationship Between Inter-rectus Distance and Symptom Severity in Women With Diastasis Recti Abdominis in the Early Postpartum Period

#### Nadia Keshwani, Sunita Mathu, Linda McLean 2018

In a study of **84 postpartum women**, researchers explored whether the width of abdominal muscle separation—known as **inter-rectus distance (IRD)**—was linked to symptom severity in **diastasis recti abdominis (DRA)**. Results showed that a larger IRD did not automatically mean worse symptoms: some women with wide separations reported little discomfort, while others with smaller gaps experienced notable pain, weakness, or body image concerns. This highlights that symptom severity is **multifactorial** and cannot be judged by IRD alone. However, the study was limited by its modest sample size, lack of longitudinal follow-up, and absence of functional tools such as **core endurance** or **pelvic floor assessments**.

### Prevalence of Diastasis Recti and Associated Factors among Women Attending Antenatal and Postnatal

#### Careatmekelle City Health Facilities, Tigray, Ethiopia

#### Abayneh Alamer\*, Gebresilassie Kahsay and Hariharasudhan Ravichandran 2019

In a study of **456 women** receiving antenatal and postnatal care in **Mekelle, Ethiopia**, researchers examined the prevalence and risk factors of **diastasis recti abdominis (DRA)**. Screening was performed using a **finger-width palpation tool** during abdominal contraction—a practical though less precise method compared to ultrasound. Results revealed a **high rate of DRA**, with a greater

likelihood among women in later pregnancy stages, those with **multiple births**, higher BMI, caesarean deliveries, or lower physical activity. The findings emphasise the need for **routine screening** and **physiotherapy-based education** in maternal care. Limitations included reliance on a single clinical technique, potential recall bias from self-reported data, and lack of longitudinal follow-up to track progression or resolution postpartum.

### Prevalence, potential risk factors and sequelae of diastasis recti abdominis

#### Stefánia Gitta, Zoltán Magyar, Péter Tardi, Melinda Járomi, Pongrác Ács, János Garai, József Bódis, Márta Hock 2017

Around **30–60% of postpartum women** develop **diastasis recti abdominis (DRA)**. Risk rises with **multiple pregnancies**, **higher BMI**, **older age**, **caesarean delivery**, and **low activity**. Diagnosis uses **finger-width palpation** or a more precise **ultrasound**. Beyond cosmetic concerns, DRA can cause **back pain**, **poor core stability**, **pelvic floor issues**, and **hernias**. Research is limited by **inconsistent tools**, **reliance on self-reports**, and **lack of long-term follow-up**, highlighting the need for **better screening and standardised rehab strategies**.

### Prevalence, Risk Factors, and Consequences of Diastasis of Rectus Abdominis in Women: A Narrative

#### Parisa Ghadiri Harati, Seyed Majid Hosseini, Atiyeh Javaheri, Farideh Dehghan Manshadi

A narrative review by Ghadiri Harati et al. (2000–2021) analysed 40 studies on DRA, reporting prevalence of 27–100% in pregnancy and 30–68% postpartum. Risk factors included multiparity, caesarean delivery, age >35, BMI >25, and low activity. Most used the finger-width palpation tool, though ultrasound was more reliable. DRA was linked to pain, pelvic floor dysfunction, incontinence, and hernia, with limitations of non-standard protocols, varied designs, and little long-term data.

### Prevalence of diastasis recti in immediate post-partum women of urban and rural areas of Navsari region: A cross-sectional study

#### Neha V. Vaidya, Krishna Mistry, Hemangini G. Chauhan, Faiza D. Bariwala, Kajal S. Thakur, Priyanka Sunilkumar 2025

The Navsari cross-sectional study (2025) assessed **120 immediate postpartum women** using the **finger-width palpation tool** to measure inter-recti distance. Results showed DRA prevalence was **65% in urban** and **58% in rural** women, with higher rates linked to **multiparity**, **age >30**, and **caesarean delivery**. The authors concluded that early screening and physiotherapy are essential to reduce complications like back pain and pelvic instability.

### Effects of Caesarean Section and Vaginal Delivery on Abdominal Muscles and Fasciae- 2020

#### Chenglei Fan, Diego Guidolin

The 2020 *Medicina* study examined **40 postpartum women** using **histological analysis tools** and found that **caesarean sections caused greater fascia disruption and scar tissue**, while **vaginal delivery mainly stretched muscles**; overall, CS led to more lasting abdominal weakness and a higher risk of DRA. A **key limitation** was the **small**

**sample size and single-centre design**, which reduces generalizability, and the reliance on **histological tissue analysis rather than functional outcomes**, meaning the findings show structural changes but not how they directly affect recovery in daily life.

### Prevalence of Diastasis Recti Abdominis and Its Impact on Quality of Life in Association with Low Back Pain After Postpartum; A Cross-Sectional Study

Maha Bilal Butt

About **30–60% of postpartum women** develop *Diastasis Recti Abdominis (DRA)*, usually measured by **fingerbreadth or ultrasound**. Those with DRA are nearly **twice as likely** to have **low back pain**, which reduces mobility, energy, and overall **quality of life**. Cross-sectional studies show strong associations but not causation, underscoring the need for **routine screening and rehab** to help mothers regain strength and confidence.

## Methodology

### Study Design

This study was conducted as a Prevalence Study of Diastasis Recti Abdominis among Women following Vaginal Delivery and Caesarean Section: a comparative cross-sectional study.

### Study Setting

Lakshmi Madhavan Hospital, Tirunelveli.

### Study Population

Postpartum women aged 20-40 years who had childbirth occurred vaginal or caesarean section where include in the study.

### Sample Size

A total of **200 postpartum women** participated in the study:

- **Group A:** 100 women following vaginal delivery
- **Group B:** 100 women following caesarean section

### Sampling Technique

A **purposive convenience sampling technique** was used.

### Inclusion Criteria

- Postnatal women aged **20–40 years**
- **6 weeks and 6 months postpartum**
- Women who had experienced **vaginal delivery or caesarean section**
- Women consenting to participate and provide informed consent
- The participate to willing to participate in this study

### Exclusion Criteria

- Multiparous pregnancies
- Previous abdominal surgery
- Diagnosis of abdominal hernia
- Neurological or musculoskeletal disorders affecting the trunk
- High-risk pregnancy

## Variables

- Independent Variable: Mode of delivery (Vaginal delivery,

Caesarean section)

- Dependent Variable: Diastasis Recti Abdominis (Inter-Recti Distance)

### Outcome Measure

- **Inter-Recti Distance (IRD)**

Measured using the **finger-breadth method / measuring tape**

**Measurements were taken at three levels:**

- At the level of the **umbilicus**
- **4.5 cm above** the umbilicus
- **4.5 cm below** the umbilicus

### Procedure

After collecting informed content, age and other relevant demographic data, information on parity, mode of childbirth, and duration since delivery was recorded.

Participants were placed in a **crook lying** position with knee flexed and their feet resting flat on the bed.

Participants were instructed to execute a **partial curl-up**, raising the head and shoulder slightly off the bed.

Inter-recti distance was assessed by palpation at the specified measurement site.

Data from all assessments were documented and prepared for analysis.

## Data Analysis

### Descriptive Statistics

See Table 1.

### Frequency Tables

See Tables 2 and 3.

### Descriptive Statistics

Frequency Tables

See Tables 4, 5 and 6 and Figure 1.

## Results

The prevalence of DRA was statistically significantly higher in the caesarean section group (78%) compared to the vaginal delivery group (54%,  $p < 0.001$ ). Mean value inter-recti distance at the umbilicus was also greater in the caesarean section ( $3.3 \pm 0.7$  cm) than in the vaginal delivery group ( $2.5 \pm 0.6$  cm,  $p < 0.001$ ). Moderate to severe DRA was primarily identified in the caesarean section study sample, in contrast, mild DRA was more common among vaginal delivery participants.

## Discussion

Diastatic recti abdominis (DRA) was significantly more common in women who had caesarean sections than in women who had vaginal deliveries, according to the observed cross-sectional comparative analysis prevalence evaluation. This finding may be linked to prolonged tissue strain, surgical disruption of the abdominal wall, and decreased neuromuscular activation of the abdominal muscle structure associated with cesarean sections. Conversely, women who gave birth vaginally showed a comparatively lower prevalence, perhaps as a result of the structural integrity of the abdominal wall

**Table 1:** Descriptive Statistics.

Descriptive Statistics				
	Age	Del mode	BMI	DRA
Valid	250	250	250	250
Missing	0	0	0	0
Mean	28.03		28.09	
Std. Deviation	4.562		5.020	
Minimum	19.00		16.80	
Maximum	46.00		53.54	

**Table 2:** Frequency Tables.

Frequencies for Del mode				
Del mode	Frequency	Percent	Valid Percent	Cumulative Percent
Vaginal	100	40.0	40.0	40.0
caesarean	150	60.0	60.0	100.0
Missing	0	0.0		
Total	250	100.0		

*Note.* The following variables have more than 10 distinct values and are omitted: Age, BMI.

**Table 3:**

Frequencies for DRA				
DRA	Frequency	Percent	Valid Percent	Cumulative Percent
No	108	43.2	43.2	43.2
Yes	142	56.8	56.8	100.0
Missing	0	0.0		
Total	250	100.0		

**Table 4:** Frequency Tables.

Frequencies for DRA					
Del mode	DRA	Frequency	Percent	Valid Percent	Cumulative Percent
Vaginal	No	75	75.0	75.0	75.0
	Yes	25	25.0	25.0	100.0
	Missing	0	0.0		
	Total	100	100.0		
Caesarean	No	33	22.0	22.0	22.0
	Yes	117	78.0	78.0	100.0
	Missing	0	0.0		
	Total	150	100.0		

**Table 5:**

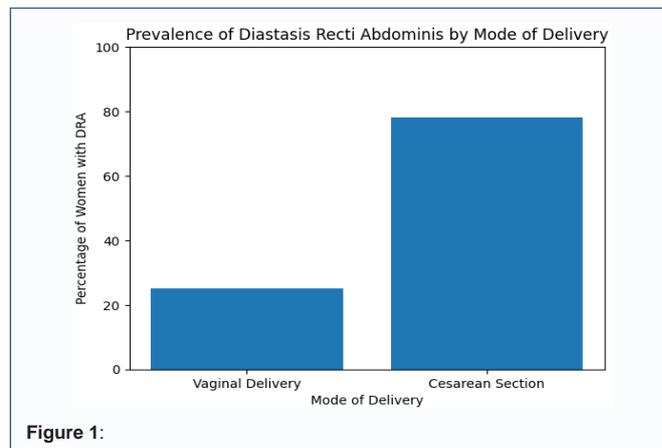
Contingency Tables			
del mode	DRA		Total
	no	yes	
caesarean	33	117	150
vaginal	75	25	100
Total	108	142	250

*Note.* Each cell displays the observed counts

remaining intact and the earlier restoration of function. The findings are consistent with earlier research showing that surgical delivery increases susceptibility to compromised fascial separation and

**Table 6:**

Chi-Squared Tests			
	Value	df	p
X <sup>2</sup>	68.69	1	< .001
N	250		



**Figure 1:**

abdominal muscle function. Inadequate recovery time, insufficient core muscle re-education, and decreased postpartum physical activity are additional factors that could prolong DRA. Early diagnosis and focused physiotherapeutic treatment targeting on core stabilization and abdominal muscle re-education are essential to prevent chronic complications such as low back pain, postural dysfunction, and pelvic floor disorders.

## Limitation and Recommendation

### Limitation

The present study has some limitations although it offers relevant observations about the prevalence of diastasis recti abdominis (DRA) in postpartum women. The ability to determine causality between DRA development and mode of delivery is limited by the cross-sectional study. Generalizability may be limited because the sample was limited to a particular age group and geographical area. Additionally, the measurement accuracy may have been impacted by the assessment's exclusive reliance on clinical palpation without imaging confirmation. The observed prevalence may have been impacted by differences in the participants' levels of physical activity, postpartum recuperation, and pre-pregnancy abdominal strength.

### Recommendation

It is recommended to routinely assess for DRA after giving birth in order to facilitate early diagnosis and prompt treatment. To avoid chronic musculoskeletal issues, structured physiotherapy treatments such as pelvic floor integration, abdominal strengthening, and core stability exercises are imperative. Longitudinal designs and objective imaging methods, like ultrasound, should be used in future studies to confirm results and direct evidence-based rehabilitation approaches.

## Conclusion

This comparative cross-sectional study emphasizes the impact of surgical delivery on abdominal wall integrity by showing a significantly higher prevalence of diastasis recti abdominis (DRA) among women who had caesarean sections as opposed to vaginal deliveries. The results highlight the significance of early postpartum screening in

order to detect DRA and start prompt interventions. Restoring functional capacity, lowering the risk of long-term musculoskeletal complications, and improving overall postpartum quality of life all depend on structured physiotherapy programs that emphasize pelvic floor integration, targeted abdominal strengthening, and core stabilization. It is also advised to educate people on maintaining the function of their abdominal muscles and gradually returning to physical activity. Future research employing prospective study

designs and objective assessment tools, such as ultrasound, is justified to monitor DRA progression, assess the effectiveness of rehabilitation strategies, and identify standardized guidelines for postpartum management. Early recognition and evidence-based treatments are pivotal for optimizing maternal musculoskeletal health and functional recovery.