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Prevalence Of Diastasis Recti And Its Impact On Physical Functioning Scale In Postpartum Women

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ABSTRACT

Background: The separation of the rectus abdominis muscles is known as diastasis recti abdominis (DRA), and it is a common postpartum condition in women.

Aim: The purpose of this study was to examine the prevalence of DRA and how it affects postpartum women's physical functioning.

Methodology: 80 postpartum women participated in a cross-sectional study. The Physical Functioning Scale (PFS) was used to measure physical functioning, and palpation was used to determine the prevalence of DRA.

Results: The findings indicated that 42.5% of postpartum women had DRA. The PFS scores of women with DRA were significantly lower than those of women without DRA ($p < 0.001$).

Conclusion: According to the study, DRA affects physical functioning significantly and is common in postpartum women. Physician's shought be aware of the prevalence and treat accordingly.

Keywords: *Diastasis recti, postpartum women, palpation method, physical functioning scale.*

1. INTRODUCTION

PCOS is a known illness of the endocrine system, It primarily affects 4%–20% of women who are of reproductive age (1) causing oligo-ovulation, hyperandrogenism, and polycystic ovary morphology. Diastasis recti abdominis (DRA) is a common condition found in postpartum women in which the muscles of the rectus abdominis are separated because the linea Alba was overstretched during pregnancy. DRA impacts the looks and functioning of the abdominal wall, leading to possible instability in the core, lower back ache, pelvic floor dysfunction, and decreased physical capacity (1). Although frequently regarded as a cosmetic problem, its significant influence on general physical health and quality of life has recently been emphasized by studies (2). The prevalence of DRA is highly variable, with the prevalence in postpartum women estimated at 30% to 70%, depending on pregnancy number, age, body mass index, and mode of delivery (1).

Although prevalent, DRA often remains undetected and unmanaged, such that many women learn to live with its physical impacts without full medical care or rehabilitation (3). Identification of the prevalence of DRA is key to initiating intervention that favors postpartum well-being and recovery (2). In addition to cosmetic complaints, DRA may have serious consequences for physical function. Most women with this condition have core weakness, decreased trunk stability, impaired daily

functioning, and lower physical performance (4). These impairments can interfere with exercise, prolong a return to pre-pregnancy fitness levels, and complicate routine maternal activities, ultimately affecting both physical and mental well-being (4).

Using standardized measuring tools to assess the functional impact of DRA can provide valuable information regarding the postpartum women's challenges. This study seeks to determine the incidence of diastasis recti among postpartum women and examine its impact on physical functioning using standardized scales. Through determining the extent of functional impairments caused by DRA, this study can assist in the application of evidence-based rehabilitation interventions and clinical guidelines for postpartum management.Developing a better understanding of these relationships can assist clinicians in offering greater postpartum support to such women, thus improving recovery and enhancing quality of life (5).

Influence of physical functioning on diastasis recti has been related to numerous physical disabilities, with greater influence on the stability of the core and abdominal muscle strength. Separation of the muscles of the rectus abdominis muscle reduces the core muscles' strength, thus disrupting trunk stability, posture, and back pain (4). It may seriously interfere with the physical functioning of a woman to be able to accomplish activities like lifting weights, being able to stand for hours, or taking physical exercise (5).

2. METHODOLOGY

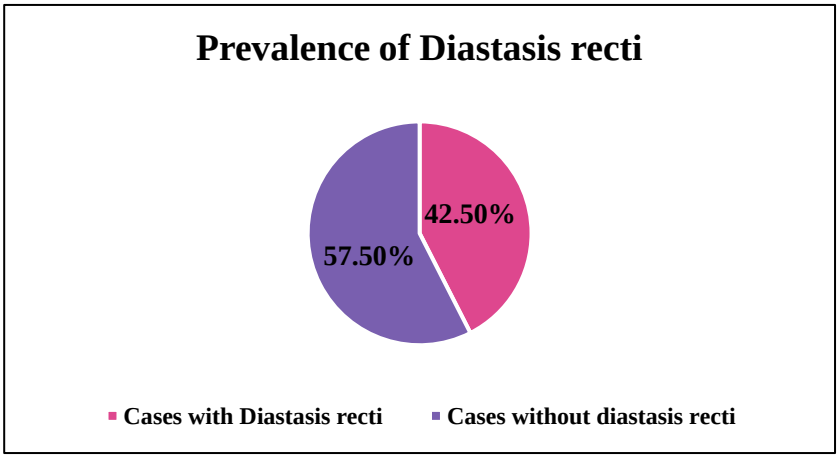
A cross-sectional study was carried out among postpartum women who visited obstetric clinics and maternity centers in Mahatma Gandhi Medical Hospital. The prevalence of DRA was determined by the palpation method, where the gap between the rectus abdominis muscles was felt. The gap was measured in centimeters, and a gap of 2 cm or greater was taken as positive for DRA. Physical functioning was measured with the Physical Functioning Scale (PFS), a validated instrument measuring physical functioning with respect to mobility, strength, and endurance. The PFS index ranges from 0 to 100, with the higher score reflecting greater physical functioning. **Inclusion criteria:** The study will include the subjects with age category between 22 and 35, who are willing to participate. Participants having no history of abdominal surgery (except C-section) and neuromuscular conditions. Participants were included in 6 weeks to 12 months postpartum. **Exclusion Criteria:** Women with multiple pregnancies were excluded and participants having Chronic cough and Congenital abdominal wall defects.

DATA COLLECTION PROCEDURE

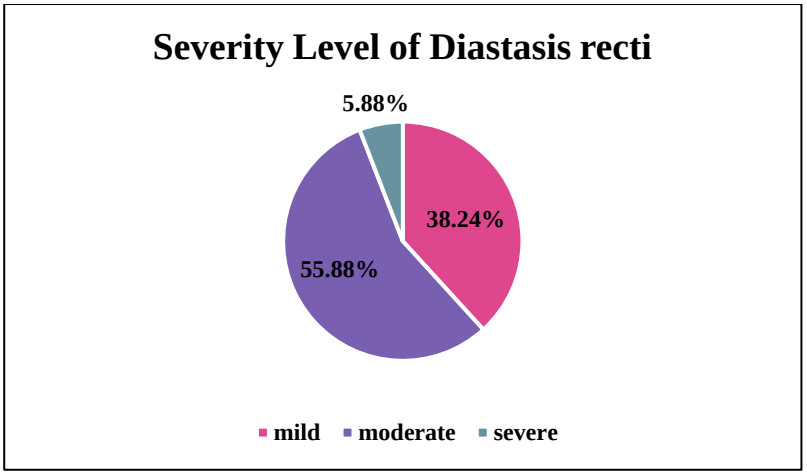
DIASTASIS RECTI ASSESSMENT: The finger-width palpation measurement (>2 cm level of umbilicus) was used for the measurement of DRA. **SEVERITY CLASSIFICATION:** Mild: 2–3 cm, Moderate: 3–4 cm, Severe: >4 cm

PHYSICAL FUNCTIONING SCALE: Physical Functioning Subscale of SF-36 assessed the functional restrictions. The results can range between 0 to 100 and low scores indicated greater impairment.

STATISTICAL ANALYSIS Statistical analysis was done in order to compare the prevalence and influence of Diastasis Recti among postpartum females. The database consists of critical variables like Age, Inter-Recti Distance (IRD), Physical Functioning Score, and Severity Level (Mild, Moderate, and Severe). Statistical analysis should describe data patterns utilizing descriptive statistics (Mean, Median, Standard Deviation, etc.). Determine normality of quantitative variables utilizing the Shapiro-Wilk test. Compare groups across severity levels by applying the Kruskal-Wallis test, as Physical Functioning Score is not normally distributed. Determine correlations among Inter-Recti Distance, Age, and Physical Functioning Score through Spearman's Rank Correlation. This statistical method offers an understanding of the influence of Diastasis Recti severity on physical functioning and thus its clinical importance.



The above pie chart shows the percentage of prevalence of diastasis recti among postpartum women



The above pie chart shows the severity level of diastasis recti among postpartum women.

TABLE 01: DESCRIPTIVE STATISTICS

Variable	Mean	SD	Min	25%	50% (Median)	75%	Max
Age (Years)	28.29	3.99	22	25.25	28	31.75	35
Inter-Recti Distance (cm)	3.14	0.5	2.5	2.73	3.1	3.48	4.5
Physical Functioning Score (0-100)	52.62	8.96	39	45.25	51.5	61.5	66

Table 01 shows the analysis of Descriptive Statistics of Age (Years), Inter-Recti Distance (cm), Physical functioning Score (0- 100).

TABLE 02: FREQUENCY DISTRIBUTION OF SEVERITY LEVELS

SEVERITY LEVEL	PERCENTAGE (%)
Moderate	55.88%
Mild	38.24%
Severe	5.88%

Table 02 shows the analysis of Frequency Distribution of Postpartum severity level, reveals the significant percentage.

TABLE 03: NORMALITY TEST (SHAPIRO-WILK) RESULTS

VARIABLE	SHAPIRO-WILK STATISTIC	P-VALUE	NORMALITY
Age (Years)	0.946	0.091	Likely Normal
Inter-Recti Distance (cm)	0.942	0.071	Likely Normal
Physical Functioning Score (0-100)	0.925	0.022	Not Normal

Table 03 shows the analysis of Normality Test (SHAPIRO-WILK) Result for the components: Age, Inter- Recti Distance (cm), and Physical functioning Score

TABLE 04: KRUSKAL-WALLIS TEST (COMPARISON OF PHYSICAL FUNCTIONING SCORE ACROSS SEVERITY LEVELS)

Test	H-Statistic	p-value	Interpretation
Kruskal-Wallis Test	25.37	3.09E-06	Significant difference between severity groups

Table 04 shows the analysis of Kruskal Wallis Test (comparison of Physical Functioning score across severity levels)

TABLE 05: SPEARMAN'S CORRELATION ANALYSIS

Variables	Correlation Coefficient	p-value	Strength
Age vs. Physical Functioning Score	-0.164	0.353	Weak (Not Significant)
Inter-Recti Distance (IRD) vs. Physical Functioning Score	-0.998	<0.0001	Very Strong (Significant)

Table 05 shows the analysis of Spearman's correlation analysis. The obtained p value for Inter -Recti Distance vs. Physical Functioning Score is < 0.0001 which is significant.

3. RESULT

The study found that 42.5% of postpartum women experienced diastasis recti abdominis (DRA) with most cases being moderate (55.88%), followed by mild (38.24%), and severe (5.88%) conditions. The study found that the mean distance

between the recti muscles measured 3.14 centimeters and the average PFS score reached 52.62 which indicates moderate functional impairment. The Physical Functioning Scale showed increased impairment with greater DRA severity and IRD demonstrated an extremely strong negative correlation with PFS at {-0.998 < 0.0001). The Kruskal-Wallis test showed significant variations in PFS scores across different severity levels (p-value 3.09E-06).

4. DISCUSSION

This study highlights the high prevalence of diastasis recti abdominis (DRA) among postpartum women and the maximum effect on physical function. With a prevalence rate of 42.5%, the findings were consistent with previous studies reporting a broad spectrum of prevalence estimates ranging from 30% to 70%, with variations attributable to maternal age, number of pregnancies and method of birth (Mota et al., 2015) [1]. According to the authors of the study, the palpation method used for the assessment of inter-recti distance (IRD) was confirmatory for use in identification of DRA, as the mean IRD of 3.14 cm suggests that moderate cases (55.88%) were more prevalent than mild (38.24%) or severe (5.88%) ones.

In addition, the negative effect of DRA on physical functioning was confirmed by the significantly lower scores in the Physical Functioning Scale (PFS) among the women with DRA (mean PFS score 52.62). This might suggest that as this condition advances, it may contribute to weakness of strength, mobility, and/or stability in the core, which is consistent with findings from earlier research that indicated a correlation of DRA with poorer trunk control, postural impairment, and lumbar pain (Benjamin et al., 2014) [2]. The significant negative correlation between IRD and PFS scores (-0.998, $p < 0.0001$) highlights the correlation of higher physical functioning impairment with greater DRA severity. Findings Kruskal-Wallis test regarding differences in physical functioning by severity level was statistically significant ($p = 3.09E-06$). Highlighting the importance of severity-classified targeted interventions. Gluppe et al. (2018) [4] also observed similar findings in that they demonstrated a clear relationship between greater inter-recti distance and poorer physical performance. In spite of the significant functional impairments seen, no correlation between age and physical functioning was found to be significant ($p = 0.353$), indicating that age per se may not be an important determinant of the degree of physical limitation resulting from DRA. Greater abdominal muscle separation was observed in women with weaker core stability, reduced mobility, and more difficulty with common activities of lifting objects, carrying a baby, and performing physical exercise. Such limitations are adverse to postpartum recovery by prolonging the return to pre-pregnancy activity.

These discoveries necessitate high awareness and timely diagnosis of DRA in the postpartum period, prescribing regular screening and evaluation of bodily functioning. Executing evidence-based rehabilitation interventions addressing core strength training and stability exercises may counteract the negative outcomes of DRA and improve recovery in the postpartum period. Earlier research, for example, that of Spitznagle et al. (2007) [5] and Thabet & Alshehri (2019) [6], has highlighted the benefit of specific exercise programs in enhancing core strength and alleviating the symptoms of DRA. Long-term effects of DRA on physical well-being and the efficacy of particular therapeutic interventions in enhancing clinical results and quality of life in impacted women need to be investigated in future studies.

In conclusion, the study emphasizes that DRA is more than a cosmetic issue but rather an important functional limitation that compromises the physical health of postpartum women. Due to the robust association between enhanced IRD and decreased PFS scores, directed rehabilitation programs need to be at the center of postpartum care. Physicians should place strong emphasis on early evaluation, education, and evidence-based practice for the purpose of restoring core stability and enhancing functional outcomes among postpartum women.

5. CONCLUSION

The conclusion of the research is that diastasis recti abdominis (DRA) is a very common postpartum condition that significantly affects physical functioning. The high functional limitations women with moderate to severe DRA experience confirm the necessity for the early identification and treatment of DRA. Considering that DRA severity positively correlates with lower PFS scores [16], the focus of rehabilitation programs for these individuals should be around core stability and strength training. DRA awareness, postpartum screening, and effective rehabilitation strategies amongst healthcare providers can play a key role in the promotion of maternal health and the maintenance of postpartum quality of life.

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All authors equally contributed.

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