

Effectiveness of Targeted Physiotherapy and Supportive Drug Therapy in Postpartum Diastasis Recti Rehabilitation

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Abstract

Diastasis recti abdominis (DRA) is a common postpartum condition characterized by the separation of abdominal muscles, leading to core instability, pain, and functional limitations. While physiotherapy is widely used for management, the combined role of supportive drug therapy remains underexplored. This study aimed to evaluate the effectiveness of targeted physiotherapy and supportive drug therapy in reducing inter-recti distance (IRD), alleviating pain, and improving functional outcomes in postpartum women with DRA. A retrospective observational study was conducted on 80 postpartum women diagnosed with DRA. Data were collected from physiotherapy clinics and hospital records. Participants underwent a structured physiotherapy program along with supportive pharmacological management. Outcome measures included IRD, pain scores (VAS), and functional scores, assessed before and after intervention. Statistical analysis included descriptive statistics, paired t-test, correlation, and regression analysis. The findings demonstrated a significant reduction in IRD and pain levels, along with substantial improvement in functional performance following the intervention ($p < 0.001$). Correlation analysis revealed strong associations between IRD, pain, and functional outcomes. Regression analysis identified IRD and pain as significant predictors of functional recovery. The combined approach of targeted physiotherapy and supportive drug therapy is effective in improving structural, symptomatic, and functional outcomes in postpartum DRA, supporting its use as a comprehensive rehabilitation strategy.

Keywords: Diastasis recti abdominis, postpartum rehabilitation, physiotherapy, pain management, functional recovery

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1. Introduction

Diastasis recti abdominis (DRA) is a widespread postnatal disorder, in which the rectus abdominis muscles along the linea alba are separated. It is caused by the loss of integrity of the connective tissues because of the stretching and weakening of the abdominal wall during pregnancy and in most cases the hormonal changes of increased relaxin and estrogen levels affect the integrity of the connective tissues (Carlstedt et al., 2021). The incidence of DRA in postpartum women is significantly high, and these studies indicate that it remains even one year after the birth of the child, which means that it is clinically relevant and has a lasting effect (Hills et al., 2018). Pathophysiology of DRA in the course of pregnancy is associated with progressive mechanical strain of abdominal muscles and connective tissue, which is caused by uterus growth. It is worsened by biomechanical stress and ineffective postpartum recovery of the abdominal muscles (Gluppe et al., 2020). Besides, multiple pregnancies, old age of the mother, and incorrect physical exercises can also

worsen the situation (Gustavsson and Eriksson-Crommert, 2020).

DRA has a number of functional and aesthetic repercussions in clinical context. Core instability is a common symptom of women with DRA that may undermine postural control and decrease the overall trunk strength (Hills et al., 2018). Another common symptom is Lumbopelvic pain, which is usually caused by the impaired biomechanical support of the spine and pelvis (Hui et al., 2021). Additionally, DRA can cause impairment of everyday life activities such as lifting, bending and long standing, and therefore, quality of life. The issue of aesthetic concerns regarding abdominal bulging and distorted body image are also among the causes of psychological distress among impacted women (Izydorczyk et al., 2021). Different modalities of treatment have been investigated in order to treat DRA successfully. Physiotherapy is still one of the key elements of conservative management, which entails core-strengthening, muscle-pelvis floor training, and specific exercise interventions like plank training (Awad et al., 2021; Dave and Mahishale, 2019). The

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application of standardized rehabilitation programs has shown a great deal of effective results in terms of decreasing inter-recti distance (IRD) and improving functional outcomes (Hu et al., 2021). Also, to maximize the use of abdominal muscle, special techniques are introduced like neuromuscular coordination and controlled breathing exercises (Charpot, 2021). Although such interventions are generally agreed upon, supportive drug therapy, such as analgesics and anti-inflammatory drugs are used complementary to pain management and engagement in rehabilitation programs.

Although the literature on the topic of DRA rehabilitation is increasing, a majority of the current research is centered on the interventions of physiotherapy and the prospect of combined therapeutic measures is not fully explored. As an example, neuromuscular electrical stimulation (NMES) has been researched as a non-surgical intervention as an addition to exercise therapy, with positive outcomes in muscle strength, but its combination with pharmacological management is poorly studied (Kamel and Yousif, 2017). On the same note, other methods like the visceral manipulation and movement system impairment-guided therapy have demonstrated good outcomes in isolated scenarios but have not been thoroughly tested in general clinical settings (Kirk and Elliott-Burke, 2021; Kurz and Borello-France, 2017). Moreover, interventions of structured postpartum exercise to address DRA have been widely researched but these interventions frequently do not consider pain management as a strategy to increase the compliance of patients and treatment outcomes (Laframboise et al., 2021). Physical therapy of the pelvic floor has also been noted as one of the essential aspects of postpartum rehabilitation, but its use in combination with pharmacological support is not discussed fully (Lawson and Sacks, 2018). The other obvious weakness of the literature is the lack of any retrospective clinical trials to examine the actual outcomes of the combined treatment modalities in the real world, as evidence-based clinical practice.

The limitations that have been identified in existing research mean that further research is required on a more elaborate and holistic approach to DRA rehabilitation. It has been demonstrated that postpartum physiotherapy is very important in terms of recovering abdominal muscle functionality and decreasing inter-recti distance, but it could be affected by pain and patient compliance (Masan & Juricova, 2020). Regarding surgery, the approaches of DRA management are between conservative rehabilitation and invasive surgery, with the focus on the maximization of non-surgical management (Mommers et al., 2017).

Kinesio taping is a type of adjunctive technique that has proven to decrease the degree of abdominal separation and increase muscle support immediately, which presents an opportunity to consider the possibility of combining various treatment methods (Ptaszowska et al., 2021). Also, the development of diagnostic imaging, especially ultrasound-based examination, has further improved the accuracy of DRA measurement and monitoring that allows being more precise at measuring the results of the treatment (Qu et al., 2021).

Consequently, by combining specific physiotherapy with supportive drug therapy there is a possibility of a synergistic effect since both structural and symptomatic facets of DRA can be treated. The alleviation of pain with the help of pharmaceuticals can enhance the adherence of patients and enable them to focus more on rehabilitation activities and eventually become more functional.

Research Objectives

1. To evaluate the effectiveness of targeted physiotherapy in reducing inter-recti distance (IRD) in postpartum women.
2. To assess the role of supportive drug therapy in pain reduction and functional improvement.
3. To analyze the combined effect of physiotherapy and drug therapy on overall rehabilitation outcomes.

2. Methodology

2.1 Study Design, Setting, and Sample Size

This research was designed in the form of a retrospective observational study to determine the effectiveness of specific physiotherapy and supportive drug therapy in postpartum women with DRA. The physiotherapy and rehabilitation clinics and the outpatient department of a hospital that deals with postnatal care were used to collect data. Eighty postpartum women who diagnosed DRA were included following the fact that they had complete clinical records.

2.2 Inclusion and Exclusion Criteria

The participants had to be women that were diagnosed with DRA by clinical examination or ultrasound and had undergone a structured physiotherapy program within 0-12 months of childbirth. The only patients that were considered were those who had full baseline and post-treatment data. The women who had a past history of major abdominal surgery (other than cesarean section), severe comorbidity, incomplete records, or poor adherence to therapy were not included in the study.

2.3 Intervention Details

All the participants were subjected to a specific physiotherapy program which involved exercises that were core stabilization, pelvic floor muscle training exercises, exercises that were done on the plank position, breathing exercises like diaphragmatic breathing, to enhance muscle coordination. Moreover, supportive drug therapy such as non-steroidal anti-inflammatory drugs (NSAIDs), analgesics, and when needed, the use of muscle relaxants was presented to relieve pain and ensure that the patients are able to participate in rehab.

2.4 Data Collection

Patient medical records and physiotherapy logs were retrospectively used in taking data. The important variables were the IRD, the level of pain as measured by the Visual Analog Scale (VAS), functional assessment scores, and the term of the therapy. Values of both pre- and post-treatment were obtained in order to compare them.

2.5 Outcome Measures

The decrease in the IRD was the main finding of the research. The secondary outcomes were the decrease in the levels of pain in terms of VAS scores and the enhancement of the functional performance after the intervention.

2.6 Statistical Analysis

The data obtained were entered in MS Excel. Demographic and clinical variables were summarized using descriptive statistics, such as frequency, percentage, mean and standard deviation. The paired t-test was used to compare the IRD values before and after treatment, the pain scores, and the functional scores. The Pearson correlation analysis was conducted to determine the correlation between IRD and pain, as well as the correlation between IRD and functional performance. Also, the analysis based on multiple linear

regression was made to determine the important predictors of functional outcomes. The p-value of below 0.05 was declared to be statistically significant.

3. Results

3.1 Demographic Profile

Eighty 80 postpartum women with DRA were used in the research. The age demographic distribution represented that most of the participants were in the 26-30 years age brackets, which represents a normal population in the reproductive age. Most of them had a postpartum duration of 3-6 months, indicating that a significant amount of participants were in the initial stages of recovery during which intervention is most effective (Table 1). Moreover, the clinical significance of the used sample was established by the fact that the severity of DRA at the baseline was mostly moderate, then severe, and mild.

Table 1: Demographic Characteristics (n = 80)

Variable	Category	Frequency (n)	Percentage (%)
Age	20–25	18	22.5
	26–30	32	40.0
	31–35	20	25.0
	>35	10	12.5
Postpartum Duration	0–3 months	20	25.0
	3–6 months	34	42.5
	6–9 months	16	20.0
	9–12 months	10	12.5
Baseline IRD Severity	Mild (<2.5 cm)	12	15.0
	Moderate (2.5–3.5 cm)	46	57.5
	Severe (>3.5 cm)	22	27.5

Figure 1 demonstrates the distribution of demographic and baseline clinical variables of the study participants, such as age, postpartum, and the severity of diastasis recti abdominis.

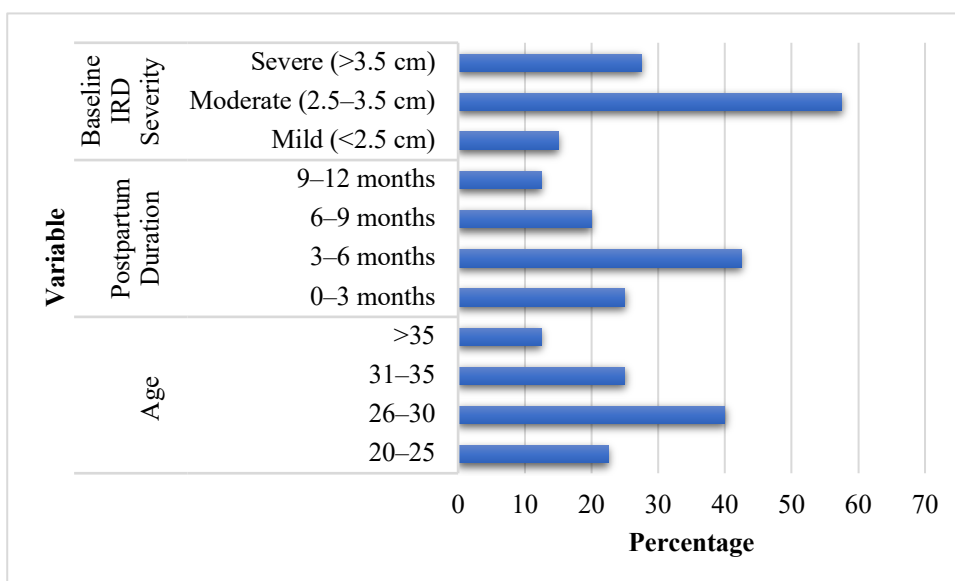


Figure 1. Participant Demographics and Baseline IRD Distribution

Most of the participants were in the 26-30 age bracket and the period 3-6 months after childbirth as indicated in Figure 1. Moreover, moderate diastasis recti was most common showing that a majority of participants had clinically significant abdominal separation at baseline.

3.2 Descriptive Statistics

The descriptive statistics give the summary of the clinical and demographic features of the participants at the baseline. The average age and the term of postpartum suggest that the group studied represents an average postpartum group receiving rehabilitation. A moderate level of abdominal separation in form of the baseline IRD is a clinically significant event warranting the intervention. Also, the initial pain level was quite high, along with lower levels of functional scores, indicating that before the treatment, there was a significant loss of functioning on the daily activities (Table 2). Such results provide a clear point of reference upon which improvements made after the intervention may be measured.

Table 2: Descriptive Statistics (n = 80)

Variable	Mean ± SD
Age (years)	29.8 ± 4.6
Postpartum duration (months)	5.2 ± 2.1
Initial IRD (cm)	3.4 ± 0.7
Pain (VAS)	6.8 ± 1.2
Functional Score	45.3 ± 6.5

3.3 Effectiveness of Intervention: Pre–Post Comparative Analysis

The paired t-test analysis showed statistically significant improvement of all of the measured outcomes after the intervention. Inter-recti distance was significantly decreased, which showed successful salvage of abdominal integrity of muscles. On the same note, pain intensity showed a significant reduction indicating the effectiveness of supportive drug-based therapy to improve the comfort of a patient in rehabilitation (Table 3). There was a significant improvement in functional scores, which implied that physical performance was improved, and the capacity to undertake daily activities was also enhanced. Such stable increases in structural, symptomatic, and functional measures prove the general efficacy of the combined treatment method.

Table 3. Pre- and Post-Intervention Outcomes

Parameter	Pre-treatment (Mean ± SD)	Post-treatment (Mean ± SD)	t-value	p-value
IRD (cm)	3.4 ± 0.7	1.9 ± 0.5	14.52	<0.001
Pain (VAS)	6.8 ± 1.2	2.9 ± 1.0	18.36	<0.001
Functional Score	45.3 ± 6.5	72.6 ± 7.8	-16.24	<0.001

Figure 2 shows the comparison of the clinical outcomes provided prior to and after the intervention.

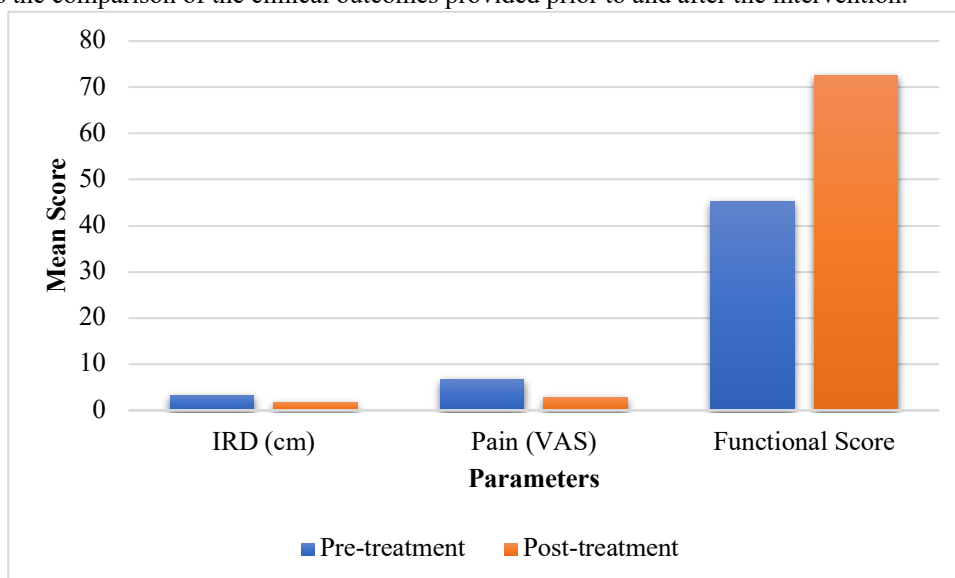


Figure 2. Pre- and Post-Treatment Outcome Comparison

Figure 2 indicates that IRD and pain scores reduced significantly and functional scores greatly improved after the intervention.

3.4 Relationship Between Clinical Variables

Correlated analysis has been used to examine the correlations between important clinical variables. The results showed that the variables inter-recti distance and pain have a strong positive correlation, which implies that the more the abdominal separation, the more the discomfort. Contrarily, the inter-recti distance and functional score showed a strong

negative relationship, showing that increased distance lead to a negative functional capacity (Table 4). Moreover, the relationship between pain and functional performance was negative, which proves once again the effect of pain on day-to-day life. The structural and functional recovery in DRA rehabilitation is interrelated as demonstrated by these relationships.

Table 4. Correlation Matrix of Key Variables

Variables	IRD	Pain (VAS)	Functional Score
IRD	1	0.68**	-0.72**
Pain (VAS)	0.68**	1	-0.65**
Functional Score	-0.72**	-0.65**	1

Note: $p < 0.01$ indicates statistical significance

3.5 Predictors of Functional Recovery

A multiple regression analysis was performed to determine the predictors of the improvement in functional improvement after the intervention. The findings have revealed that the inter-recti distance as well as pain played an important role in altering functional outcomes. Out of these variables the inter-recti distance proved to be the strongest predictor thus demonstrating the fact that structural improvement is a critical factor in overall recovery. The effect of pain reduction was also significant, implying that finding is that functional gains are increased by symptom management (Table 5). These results indicate the relevance of the concurrent therapeutic method aimed at both anatomical and pain management.

Table 5. Regression Analysis for Functional Outcomes

Predictor	β	SE	t-value	p-value
IRD (cm)	-0.52	0.08	-6.50	<0.001
Pain (VAS)	-0.38	0.10	-3.80	<0.001
Constant	85.20	4.50	18.93	<0.001

4. Discussion

The study tested the efficacy of specific physiotherapy accompanied by the supportive use of drugs in the postpartum patients with the DRA. The results showed that there were great improvements in the inter-recti distance IRD, reduction in pain and functional performance after the intervention. The findings of these studies suggest that a therapeutic intervention including both structural and symptomatic DRA can result in significant clinical outcomes. The mentioned increase in the state of IRD shows that the integrity of the abdominal wall is successfully restored, and the decrease in the pain level proves that adjunctive pharmacological support will allow patients to feel more comfortable and engaged in the process of rehabilitation. The functional scores become also improved which also contributes to the effectiveness of the intervention in changing the performance of daily activities, not to mention, the quality of life. The crucial component of postpartum recovery is the functional restoration of the organism as the DRA does not affect physical appearance only but also affects the core stability and biomechanical effectiveness. The fact that lowering IRD and improved functional outcome demonstrated in this research study correlates highly also indicates that structural correction is one of the keys to the success of rehabilitation. Also, pain seems to ease easier involvement in the physiotherapy exercises thereby speeding up the recovery process. All these findings are conducive to the idea of a multimodal treatment approach to the best DRA management.

The results of the current study can be compared to the results of the previous studies that proved the effectiveness of interventions based on physiotherapy in

the reduction of DRA. The research has demonstrated that core stabilization and plank-based exercise programs have a considerable role in enhancing abdominal muscle activity and decrease inter-recti separation (Thabet and Alshehri, 2019; Walton et al., 2016). In the same manner, neuromuscular electrical stimulation (NMES) and taping have also been documented to increase muscle stimulation and abdominal wall recovery (Situt & Kanase, 2021). The present research builds upon these results by including supportive drug therapy that seems to play a role in enhancing the results of pain control and rehabilitation in general. Contrary to previous findings, the correlation between DRA and lumbopelvic pain is already reported, and the separation is associated with increased pain and functional impairment (Sperstad et al., 2016). These findings are aligned with the results of the present study that shows a great decrease in pain, and the need to consider the elements of symptoms in the treatment process is significant. In addition, in comparison, it has been noted that advanced training techniques, like TRX and core stabilization exercises, are superior in enhancing postural stability and functional performance in women who have DRA (Yalfani et al., 2021). These observations are supported by the current research which shows that there is significant functional improvement after specific physiotherapy. Moreover, the wider view of DRA management is based on the necessity to apply more individualized and multidisciplinary strategies, especially when physical and functional impairment is involved (Williams and Lopp, 2021). The integration of physiotherapy with pharmacological assistance in the specified study is the embodiment of the specified holistic approach and

another signifier of the efficiency of the mixed treatment practices.

The findings of the current study are relevant to the clinical practice. A multimodal rehabilitation approach should be considered in the case of postpartum DRA, based on the established effectiveness of the combined physiotherapy and supportive drug treatment. Including pain control interventions and organized physical activities can help to increase patient adherence, decrease pain, and improve the general treatment outcome. To achieve the maximum recovery, clinicians need to take into account individualized treatment plans that would consider both structural abnormalities and symptomatic issues. Moreover, the intervention in the postpartum period can be more successful in the early period, which was also shown by the demographic analysis of the participants in this study.

Although there are strengths in this study, it has a number of limitations. Bias might be occasioned by the retrospective design in terms of data selection and data completeness. The lack of a control group does not allow comparing the effectiveness of combined therapy and standalone interventions directly. Besides, the variation in the treatment protocols and the compliance of the patients might have contributed to results. It can also be that the rather small sample and one-setting data collection procedure restrict the generalizability of the findings. Moreover, there was no data of long-term follow-up, which did not allow to evaluate long-term treatment effects.

The future research ought to be directed towards randomized controlled trials to confirm the results of the current research and develop other causal relationships. Long term sustainability of treatment outcomes can only be evaluated with the help of longitudinal studies which have long follow up time. It should be standardized with physiotherapy protocols and add advanced rehabilitation techniques, such as biofeedback and digital therapy platforms, which would be beneficial to the treatment. There is also the interest in knowing how different pharmacological interventions can be used to enhance pain management and recovery. It is proposed to use a multidisciplinary approach involving the efforts of physiotherapists, gynecologists, and rehabilitation specialists to develop evidence-based and all-embracing guidelines on the issue of DRA management.

5. Conclusion

It was found that combined therapy of certain physiotherapy and drug therapy is highly effective in the management of postpartum DRA. The findings showed a high degree of structural, symptomatic and functional improvements after the intervention. The decrease in the IRD was a valuable measure, which indicated that the integrity of the abdominal muscles was back to a normal level, and this is required to sustain the core stability and biomechanical activities. Secondly, the decrement of the levels of pain was considerable enough to highlight the importance of supportive drug therapy to ensure that the patient feels more comfortable and capable of performing the rehabilitation activities. The

improvement in the functional scores also shows clinical relevance of the intervention as it demonstrates good physical functioning and the ability to perform activities of day-to-day living. Another close association between the functional outcome and structural recovery, which was discovered in the article, is that the decline in IRD is a major consideration in the success of the overall rehabilitation. Moreover, pain reduction could also be considered an important factor in improving functional efficiency, which justifies the importance of a multimodal treatment approach. Generally, physiotherapy and pharmacological support are two forms of intervention that are effective and complete in the management of postpartum DRA. The results are in favour of the use of integrated therapeutic interventions in clinical settings to maximise the recovery and enhance the quality of life of women who are in the postpartum phase.

Reference

1. Awad, E., Mobark, A., Zidan, A. A., Hamada, H. A., & Shousha, T. M. (2021). Effect of progressive prone plank exercise program on diastasis of rectus abdominis muscle in postpartum women: A randomized controlled trial.
2. Carlstedt, A., Bringman, S., Egberth, M., Emanuelsson, P., Olsson, A., Petersson, U., ... & Theodorsson, E. (2021). Management of diastasis of the rectus abdominis muscles: recommendations for Swedish national guidelines. *Scandinavian Journal of Surgery*, *110*(3), 452-459.
3. Charpot, V. (2021). Management of severe diastasis recti abdominis by abdominal strengthening exercise in women after postpartum period: A case study. *International Journal of Health Sciences and Research*, *11*(6), 367-373.
4. Dave, H., & Mahishale, A. (2019). Effect of structured abdominal exercise programme on diastasis of rectus abdominis muscle in postpartum women-an experimental study. *J Phys Educ Sport*, *6*, 07-15.
5. Gluppe, S. B., Engh, M. E., & Bø, K. (2020). Immediate effect of abdominal and pelvic floor muscle exercises on interrecti distance in women with diastasis recti abdominis who were parous. *Physical Therapy*, *100*(8), 1372-1383.
6. Gustavsson, C., & Eriksson-Crommert, M. (2020). Physiotherapists' and midwives' views of increased inter recti abdominis distance and its management in women after childbirth. *BMC women's health*, *20*(1), 37.
7. Hills, N. F., Graham, R. B., & McLean, L. (2018). Comparison of trunk muscle function between women with and without diastasis recti abdominis at 1 year postpartum. *Physical therapy*, *98*(10), 891-901.
8. Hu, J., Gu, J., Yu, Z., Yang, X., Fan, J., You, L., ... & Chen, C. (2021). Efficacy of standardized rehabilitation in the treatment of diastasis rectus abdominis in postpartum women. *International journal of general medicine*, 10373-10383.

9. Hui, W. A. N. G., Xiaolan, F. E. N. G., Zishu, L. I. U., & Yan, L. I. U. (2021). A rehabilitation programme focussing on pelvic floor muscle training for persistent lumbopelvic pain after childbirth: A randomized controlled trial. *Journal of rehabilitation medicine*, 53(4), 2770.
10. Izydorczyk, B., Walenista, W., Kamionka, A., Lizińczyk, S., & Ptak, M. (2021). Connections between perceived social support and the body image in the group of women with diastasis recti abdominis. *Frontiers in psychology*, 12, 707775.
11. Kamel, D. M., & Yousif, A. M. (2017). Neuromuscular electrical stimulation and strength recovery of postnatal diastasis recti abdominis muscles. *Annals of rehabilitation medicine*, 41(3), 465-474.
12. Kirk, B., & Elliott-Burke, T. (2021). The effect of visceral manipulation on Diastasis Recti Abdominis (DRA): A case series. *Journal of bodywork and movement therapies*, 26, 471-480.
13. Kurz, J., & Borello-France, D. (2017). Movement system impairment-guided approach to the physical therapist treatment of a patient with postpartum pelvic organ prolapse and mixed urinary incontinence: case report. *Physical Therapy*, 97(4), 464-477.
14. Laframboise, F. C., Schlaff, R. A., & Baruth, M. (2021). Postpartum exercise intervention targeting diastasis recti abdominis. *International journal of exercise science*, 14(3), 400.
15. Lawson, S., & Sacks, A. (2018). Pelvic floor physical therapy and women's health promotion. *Journal of midwifery & women's health*, 63(4), 410-417.
16. Mašan, J. Ž., & Juricova, E. (2020). J. Postpartum Physiotherapy of diastase musculi recti abdominis. *Health and Social Work*, 15(3), 130-134.
17. Mommers, E. H., Ponten, J. E., Al Omar, A. K., de Vries Reilingh, T. S., Bouvy, N. D., & Nienhuijs, S. W. (2017). The general surgeon's perspective of rectus diastasis. A systematic review of treatment options. *Surgical endoscopy*, 31(12), 4934-4949.
18. Ptaszkowska, L., Górecka, J., Paprocka-Borowicz, M., Walewicz, K., Jarzab, S., Majewska-Pulsakowska, M., ... & Ptaszkowski, K. (2021). Immediate effects of kinesio taping on rectus abdominis diastasis in postpartum women—preliminary report. *Journal of clinical medicine*, 10(21), 5043.
19. Qu, E., Wu, J., Zhang, M., Wu, L., Zhang, T., Xu, J., & Zhang, X. (2021). The ultrasound diagnostic criteria for diastasis recti and its correlation with pelvic floor dysfunction in early postpartum women. *Quantitative Imaging in Medicine and Surgery*, 11(2), 706.
20. Situt, G., & Kanase, S. (2021). Effectiveness of NMES and taping on Diastasis Recti in postnatal women. *J Ecophysiol Occup Health*, 21(3), 105-111.
21. Sperstad, J. B., Tennfjord, M. K., Hilde, G., Ellström-Engh, M., & Bø, K. (2016). Diastasis recti abdominis during pregnancy and 12 months after childbirth: prevalence, risk factors and report of lumbopelvic pain. *British journal of sports medicine*, 50(17), 1092-1096.
22. Thabet, A. A., & Alshehri, M. A. (2019). Efficacy of deep core stability exercise program in postpartum women with diastasis recti abdominis: a randomised controlled trial. *Journal of musculoskeletal & neuronal interactions*, 19(1), 62.
23. Walton, L. M., Costa, A., LaVanture, D., McIlrath, S., & Stebbins, B. (2016). The effects of a 6 week dynamic core stability plank exercise program compared to a traditional supine core stability strengthening program on diastasis recti abdominis closure, pain, Oswestry disability index (ODI) and pelvic floor disability index scores (PFDI). *Phys Ther Rehabil*, 3(1), 3.
24. Williams, A., & Lopp, K. (2021). *Best Treatment for Two Disparate Problems: Post-partum Diastasis Recti and Adolescent Concussion* (Doctoral dissertation, Azusa Pacific University).
25. Yalfani, A., Bigdeli, N., & Gandomi, F. (2021). The effects of Suspension (TRX) versus core stabilization training on postural stability, lumbopelvic control and proprioception in women with DiastasisRecti Abdominis: A Randomized Controlled Trial.