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REVIEW ARTICLE

Efectiveness of Physiotherapy in Postpartum Women with Diastasis Recti: A Review

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ABSTRACT

DRA (Diastasis rectus abdominis) is a gynecological condition that can manifest with symptoms with a visible bulge in the abdomen, especially when contracting abdominal muscles, and may be accompanied by lower back pain, poor posture, and difficulty with daily tasks. While the classic presentation of DRA involves deficits, it is essential to recognize the effectiveness of physiotherapy interventions in postpartum women with diastasis recti. This manuscript comprehensively reviews the literature examining the effectiveness of Physiotherapy interventions in postpartum women with diastasis recti. A thorough search of Pubmed and Google Scholar was conducted to identify relevant articles published between 2013 and 2023. Seven studies were selected for analysis, illustrating various interventions in postpartum women with diastasis recti. It may lead to the timely diagnosis and physiotherapy management in postpartum women. Further research is warranted to elucidate the underlying mechanisms and optimal physiotherapy treatment strategies for postpartum women with diastasis recti.

KEYWORDS

• Diastasis recti • Postpartum women • Physiotherapy

INTRODUCTION

As a result of the Linea Alba's stretching and thinning, the inter-recti abdominal muscle distance increases for many women during and after pregnancy. When there is more than 2 cm of space between the recti at least once (at the umbilicus level or 4.5 cm above or below the umbilicus), it is known as Diastasis of the Rectus Abdominis (DRAM) according to research. Hormonal changes in connective

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tissue elasticity, mechanical stressors from the expanding foetus, and the movement of the abdominal organs all contribute to DRAM. While most cases of DRAM occur in the third trimester, they often manifest in the second. According to research, the inter-recti distance starts to rise at 14 weeks into the pregnancy and keeps going up all the way up to the moment of birth. The majority of women experience a complete or near-complete recovery from delayed onset muscle atrophy (DRAM) between one day and eight weeks postpartum. Measuring the inter-recti distance (IRD) is the standard procedure for evaluating and diagnosing DRA. The gold standard for evaluating IRD is an ultrasound and callipers.[1]

Pregnant women and their babies are particularly vulnerable to the harmful effects of DRAM, which affects a large percentage of the population. Reports of DRAM incidence range from 66% to 100% in the third trimester of pregnancy and up to 53% in the first few weeks after giving birth. Posture, stabilisation of the trunk and pelvis, breathing, trunk mobility, and visceral support are all vitally dependent on the abdominal wall. These functions are compromised and even affected by weaker abdominal muscles as the inter-recti distance increases. Because of this, the lumbar spine and pelvis are at increased risk of injury due to altered trunk mechanics, decreased pelvic stability, and altered posture. Discomfort in the belly is highly associated with diarrhoea in the early postpartum period. Women may have physical symptoms such as lower back discomfort, pelvic floor dysfunction, and changes in abdominal muscle function at different points after giving birth. Faecal incontinence, pelvic organ prolapse, and urine incontinence are all examples of pelvic floor dysfunctions that people often experience.[2]

It changes the lives of women significantly after giving birth.[3] Few details on the prevention or treatment of DRAM are available, despite the fact that it is a prevalent and serious clinical issue. Potential danger signs include incest, mother age, and nursery duties that have been linked to DRAM. A greater body mass index and weight increase may be associated with DRAM, however the data is mixed. Evidence suggests that surgical correction of DRAM can alleviate back discomfort and other symptoms associated with a broad diastasis. The likelihood of developing DRAM appears to be reduced and the amount of DRAM appears to be reduced, anecdotally, by regular activity before pregnancy and throughout the prenatal period, respectively. Maintaining muscular tone, strength, and endurance, enhancing general well-being, and lowering low back discomfort and labour pain are some of the reasons why exercise is recommended for pregnant women by the American College of Obstetricians.[5]

One of the worst consequences of DRA is the occurrence and persistence of lower back discomfort in women after giving birth. Women with DRA are more likely to have a higher degree of pain, postpartum, in the abdominal and pelvic region. Four out of ten women still have low back pelvic pain (LBPP) six months after giving birth, according to estimates. For a lot of women after giving birth, Diastasis Recti abdominis is not a health issue that spontaneously resolves itself and it may even last for many years. New recommendations state that physiotherapy is the best course of treatment for DRAM, and that conservative measures should be the mainstay of care. Abdominal exercises are also frequently prescribed to postnatal women who have DRAM. Conservative therapy is regarded as one of the primary treatments for DRA. Although only a small number of studies have investigated the effects of exercise therapy in treating DRA, the main advantage of exercise therapy is that it is non- invasive management. Interestingly, regular exercise before pregnancy appears to reduce the risk of DRA and narrow the inter-recti distance. Postnatal ladies with diastasis recti abdominis (DRA) are commonly provided with abdominal exercises. Additional prevalent non-surgical interventions for women with DRA encompass aerobic activity, education on correct posture and back care, and external support devices like corsets or Tubigrip. Nonetheless, the efficacy of many non-surgical therapies, including exercise, in avoiding and/or mitigating DRAM remains ambiguous.[6]

This review sought to ascertain if non-surgical therapies can prevent or mitigate DRAM during the prenatal phase and alleviate DRAM and its adverse health consequences in the postnatal phase.

NEED FOR THE STUDY

Diastasis Recti Abdominis (DRA) impacts

a considerable proportion of postpartum women, however its treatment remains contentious. This study seeks to assess the efficacy of rehabilitation training regimens for the treatment of postpartum diastasis recti abdominis (DRA).

OBJECTIVE

The study aims to assess the use of physical therapy intervention in the treatment of Diastasis Recti Abdominis among postpartum women.

METHODOLOGY

SEARCH STRATEGY

A web search for studies from 2013-2024 was conducted in databases PubMed and Cochrane Library. Articles were identified using keywords such as diastasis recti, interventions, physical therapy, postpartum, rehabilitation, non-pharmacological, sand core exercise. The type of study is Literature Review.

STUDY SELECTION

Inclusion criteria

Types of studies: randomized controlled trials, systematic review, meta-analysis. Timeline: articles published from 2013 to 2024.

Eligible research articles were selected based on specific criteria defined by the PICOS tool. The inclusion criteria were as follows: (1) pregnant women aged ≥18 years, in gestation week 24, presenting with an IRD 28 mm or more at the level of the umbilicus, and/or 2 cm or more above and below the umbilicus at rest on initial assessment. (2) Both primigravida and multigravida women will be included, and there will be no limitations on the number of fetuses.

Exclusion criteria

Articles published in languages other than English.

Articles where full text was not available.

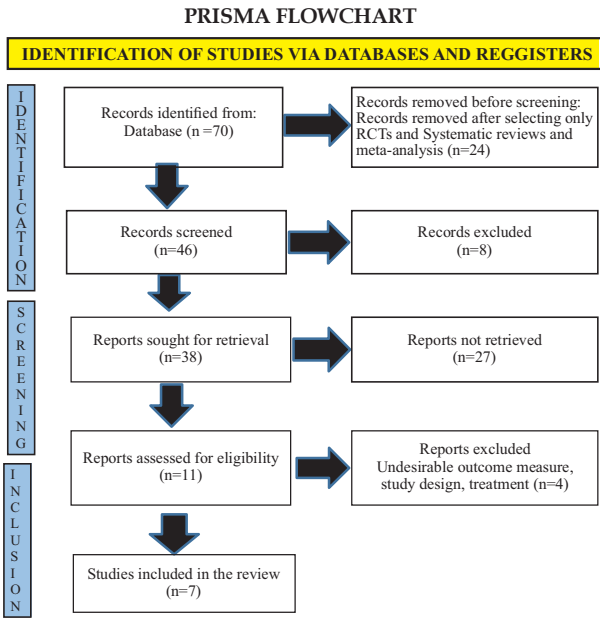
PROCEDURE:

A web-based literature source was done and the database included was PubMed and Cochrane Library. The search aimed to yield studies that establish The Effectiveness of Physiotherapy in Postpartum women with Diastasis Recti. A search strategy was developed to establish the same using the keywords. Randomized controlled trials, systematic reviews, and meta-analyses were included. The timeline chosen was from 2013 -2024.

The search yielded 70 articles. 8 articles were retained and included in this review after screening of titles and inclusion criteria.

Our primary aim was to find out the Effectiveness of physiotherapy in postpartum women with Diastasis Recti. The articles were further assessed based on objectives and data was analyzed and explored. The included articles will be studied in detail and a critical appraisal will be done.

RESULTS



LITERATURE REVIEW

1. Suhaila Shohaimi et al. (2023) conducted a randomized controlled trial to determine whether split tummy exercise would reduce diastasis recti among postpartum women prim gravidae. The population studied was prim gravidae (non-athletic) women age >18 years, diagnosed with DRA at 34–40 weeks of gestation, the birth of a singleton pregnancy by spontaneous vertex, assisted vaginal breech, or instrumental delivery. The 85.4% of the intended sample size was achieved (n = 41).

Two physiotherapists, not involved in the study and blinded to patient involvement, DRA size, and allocation, were enlisted to

teach the assigned exercises to the study participants. Data were collected at 34 weeks of pregnancy (baseline) and 8 weeks after birth (post-intervention), i.e. after 8 weeks of exercise training. DRA size was measured by transabdominal two-dimensional ultrasound imaging. DRA at 2.5 cm above the umbilicus was used as the outcome parameter in this study because this is where DRA measurement is most accurate. The development of STEP content was guided by the results of a focused literature review on physical activity interventions for postpartum women with an antenatal diagnosis of DRA.

The STEP module includes three phases, activation, integration, and strengthening of the abdominals, that are to be done from 8 weeks postpartum with a minimum frequency of 3 times a week with at least three sets of 10 repetitions each. Phase 1 (day 1 of delivery to the fourth week postpartum) Purpose of this phase was to enable isometric contraction of abdominal muscles without any load on the pelvis and spine. Participants were instructed to execute three distinct exercises: (1) alternating lower limb movements; (2) upper limb movements in conjunction with isometric abdominal exercise; and (3) isometric abdominal exercise. During the fifth and sixth weeks postoperatively, participants participated in bridging, pelvic timepieces, and posterior pelvic tilts to aid in the recovery of their abdominal and pelvic muscles. The exercises during the seventh and eighth weeks postpartum prioritised abdominal strengthening through Russian twists, planks, and crunches.

There were 57 total participants in the trial; 29 were allocated to the control group and 28 to the intervention group. There were 114 primigravidae found. After excluding seven intervention group participants and nine control group participants who failed to comply with postpartum follow-up, a total of forty-one individuals were retained for further analysis.In the intervention group, 90 % of participants completed all three phases of the exercise regime within 8 weeks postpartum, with at least three exercise sessions per week. Several non-compliers stated not having enough time was the main reason, as they had other children and/or it was simply 'neonate time running the household' as it normally does with young babies. The mean DRA size at baseline was 21.6±5.17 mm. The DRA size measured before the STEP intervention was 2.54 mm greater in the intervention group compared to the control group, and after the intervention, mothers who used the STEP intervention had a reduction of 1.96 mm in DRA. However, all the above differences were not statistically significant. There was a significant difference of 6.17 mm reduction in DRA size in the intervention group after using the STEP module (P=0.04), with a maximum reduction of up to 27%.

In conclusion, the large reduction in DRA size was demonstrated in the STEP intervention group at 8 weeks postpartum, indicating that the STEP intervention was effective as a component of a postpartum training program to manage DRA.[8]

2. To learn how conservative treatments affected diastasis recti in postpartum women, ***Iva Weingerl et al. (2022)*** reviewed the literature. This study aimed to assess the occurrence of UI and DRA in postpartum women and evaluate the effectiveness of physiotherapy in managing UI and DRA. Since we found studies that evaluated DRA both at rest and during contraction, in addition to studies that did not provide a procedure, the main problem with the existing literature is the lack of consistency in the methodologies used to measure IRD. A few studies just recorded the frequency of DRA, while others failed to provide control groups.

Two studies examined the effects of exercise and neuromuscular electrical stimulation, while one research examined the effects of Kinesio taping. Abdominal binding and exercise-based intervention were compared in two intervention trials. When looking at the subset of studies that included resting IRD, no significant pooled effects on above or below the umbilicus were found. One research, however, found that by including increasing prone plank exercise, IRD was significantly reduced.

Over the umbilicus, the subgroup of treatments that examined IRD during voluntary contraction resulted in a significant decrease, whereas below the umbilicus, no such effect was seen. Because of this difference, the combined effect was insignificant and tiny. Kinesio taping, neuromuscular without electrical stimulation and/or abdominal

exercise, and the use of an abdominal belt with or without exercise were among the many additional strategies utilised in the other intervention trials. Combining neuromuscular electrical stimulation with abdominal exercise had a positive impact, kinesio taping had an effect above the umbilicus but no effect below, and abdominal binding had mixed results when used in conjunction with exercise. Several intervention groups demonstrated a reduction in IRD, regardless of whether the measurement was taken at rest or during contraction.

Given the prevalence of DRA, more research is needed on potential effective interventions. The current body of research suggests that abdominal workouts are the most effective intervention strategy for reducing IRD. It would be wise for future intervention studies to think about standardising the instruments used to quantify IRD, or at the very least to employ easy and reliable alternatives to manual palpation, such as ultrasonography or callipers. Postpartum healthcare should incorporate protocols to assess the severity of DRA and the integrity of Linea alba. This will allow women to be promptly diagnosed with DRA and, if necessary, treated appropriately, since DRA can have a significant impact on their quality of life after giving birth.[5]

3. Postpartum diastasis recti abdominis can be treated with abdominal and pelvic floor muscle exercise, according to a review conducted by ***Sandra Gluppe et al. (2021).*** Seven separate investigations made up this review. In the pilot phase, two research used randomised controlled trials (RCTs), whereas five studies were full-scale RCTs. The age range of the women included in the sample was 18–45, and the sample size ranged from 9–175 participants. Among the included studies, the presence of a change in either DRA or IRD was the main outcome measure. But each study employed a unique set of measurements ultrasound, palpation, or a combination of the two to draw their conclusions. The investigations assessed IRD in a variety of poses (rest, head raise, and modified curl-up) and at various points along Linea alba. Also, 2.0 cm, 2.5 cm, and 2 finger-widths were some of the DRA cut-off values employed in the included research. The included studies have different secondary outcome measures. The Pelvic Floor Distress Index (PFDI), self-report low back disability, and abdominal muscle strength were the secondary outcomes that were studied. The RMQ and the Oswestry Disability Index (ODI) were used for self-report low back disability, and the isokinetic dynamometer (Biodex) and static trunk flexion endurance test were used for measurement of abdominal muscle strength.

Each treatment plan included a unique blend of modalities, exercise routines, and other elements. Participants could complete the exercises at home or with the guidance of a therapist. There was a wide range of weekly repetitions (40–210) and duration (6–16 weeks) of the workouts. Four randomised controlled trials (RCTs) incorporated TrA training among other activities, and two of those studies indicated a decrease in IRD. No one in the seven randomised controlled trials treated PFM training as an intervention in and of itself. Three studies used PFM training as part of their training programs, alongside abdominal exercise. The investigations employed palpation, callipers, and ultrasonography to measure. When compared to minimum intervention, PFM training for DRA had no discernible improvement in outcomes. Two trials included curl-up exercises in their intervention. Forty and sixty participants, respectively, were measured using palpation and ultrasound. For the purpose of recommending certain exercise regimens for the treatment of DRA after giving birth, there is presently just little scientific data.[2]

4. ***Nadia Keshwani et al. (2019)*** conducted a pilot randomized controlled trial to determine the impact of exercise therapy and abdominal binding in the management of diastasis recti abdominis in the early postpartum period. The participants were the 32 primiparous women with DRA in the early postpartum period, and the trial was a pilot RCT design to compare the effectiveness of exercise therapy and/or abdominal binding to no intervention. Outcome measures were ultrasound inter-recti distance, body image, pain, urogynecological symptoms, and function (measured using questionnaires), and trunk flexion strength and endurance (measured using clinical tests). A total of 32 women were recruited: 16 obese and16 of normal weight. Initially, and to qualify for the trial, women had to be pregnant with their first child and be between the ages of 18 and 35.

At the initial session, written informed consent was obtained, and the presence of DRA was assessed via palpation of the gap between the heads of the rectus abdominis at four levels along the Linea alba (i.e., superior to the umbilicus, 3 cm and 5 cm above, and 3 cm below the inferior limit of the umbilicus). Physical activity level was determined according to the International Physical Activity Questionnaire (Craig *et al.,* 2003) and the frequency of performing specific abdominal or pelvic floor muscle exercises (self-reported in separate questionnaires). Participants were randomly assigned (computerized, constrained, random allocation) to one of four groups: 1) exercise therapy only; 2) abdominal binding only; 3) exercise therapy and abdominal binding (combination therapy); and 4) control (no intervention).

A registered physiotherapist in women's health also gave weekly individualized sessions. This physiotherapist did not participate in any of the assessments. Women were taught postural correction and movement mechanics and were prescribed a daily home-based abdominal exercise program, which consisted of progressive loading: isolated transversus abdominis (TA) activation, bent knee leg lifts in crook lying maintaining a neutral lumbopelvic spine, eccentric trunk flexion exercises in sitting using a sheet/ towel to support the abdominal wall during the exercise, and side planks with progressive variations, performed with increasing levels of difficulty (e.g., double leg lift vs single leg lift).

During the 12-week intervention period, women in the intervention groups received an abdominal binder and a leaflet and were instructed to wear it during the day and remove it to bathe. The physiotherapist provided and fitted the binder. Combination therapy: Women received the abdominal binder and the home-based exercise program, and attended weekly physiotherapy sessions as described above. Control group: No education or intervention for women. Participants were asked to return for two follow-up evaluations, one immediately following the intervention period (i.e., at 12 weeks) and one 6 months after the end of the intervention period.

Of the 29 women whose baseline data were included in the 12-week time point analyses, IRD was largest at the superior border of the umbilicus in 23 women and 3 cm above the superior border of the umbilicus in 6 women. Three participants dropped out before the 12-week evaluation and an additional two participants dropped out before the 6-month evaluation. The preliminary results of the study imply that there is potential to improve body image and trunk flexion strength through physical rehabilitation interventions.[3]

5. In order to find out how effective a regimen of deep core stability exercises is for postpartum women who have diastasis recti, Ali A. Thabet et al. (2018) performed a randomised control experiment. Forty women who had vaginal births participated in the study, which employed a randomised controlled trial design with a parallel layout. Patients who met the inclusion criteria were those who were 22–35 years old, had a body mass index (BMI) of 29 kg/m² or below, and were 3-6 months postpartum with diastasis rectus abdominis. Participants were randomly assigned to either the study or control groups.

The first set of patients participated in a rigorous 8-week program that strengthened their core stability and core strength three times a week. They were also taught diaphragmatic breathing, the pelvic floor contraction technique, plank, isometric abdominal contraction, and the traditional abdominal training program. The ladies in this group did each exercise for 20 repetitions in three sets, with a 5-second contraction and a 10-second relaxation period in between. Additionally, as part of their home routine, they were told to exercise the same way every day.

The second group of patients underwent an 8-week regimen of regular abdominal workouts, which included static contractions, specialised posterior pelvic tilt, reverse sit-ups, trunk twists, and reverse trunk twists, three times per week. Each exercise in this set should be performed three times by a total of twenty women, with each contraction held for five seconds and then relaxed for ten seconds. Every participant was instructed to follow the same daily workout program at home. The experimental and control groups of women had an intra-recti gap of 8 weeks. Digital nylon callipers, which are valid and dependable, were used to measure 8 weeks both before and after the 8-week therapy. Within each group, we used paired T-tests to examine and evaluate inter-recti separation. Group A's Inter-recti separation has dropped

dramatically, according to the results. The inter-recti separation also decreased significantly in group B. The unpaired T-test was used to analyse and compare the inter-recti difference between the two groups. The mean value of Inter-recti separation between the two groups was found to be negligible before to the investigation. The study's findings showed that group A had a much higher mean value of inter-recti separation than group B. The current study's findings suggest that deep core stability exercise programs can help postpartum women with diastasis recti and improve their quality of life. These programs can be used as a conservative alternative to other treatment methods.[1]

6. ***Sanjivani Ramesh Khandale et al. (2016)*** performed a randomised controlled experiment to assess the impact of abdominal exercises on the reduction of diastasis recti in postnatal women. Forty individuals aged 18 to 30 were selected. Each participant was originally evaluated using a straightforward selection form pertinent to the inclusion and exclusion criteria. The inclusion criteria were postpartum women who had undergone vaginal birth, exhibited diastasis recti exceeding two finger widths, and expressed a desire to participate in the study.

A total of 30 individuals were selected based on the established inclusion and exclusioncriteria. Palpation and finger calliper techniques were employed to assess Diastasis recti and the inter-recti distance. The palpation and calliper measurement procedures were same for both locations: 4.5 cm above and 4.5 cm below the umbilicus midpoint. The participants were directed to perform a series of abdominal exercises to rectify their Diastasis Recti, which encompassed static abdominal exercises, head lifts with posterior pelvic tilt, pelvic clock exercises, double straight leg raises, plank exercises, and superman exercises. The results were analysed using data collected before and after the intervention by finger palpation and caliper techniques. The outcomes of the finger palpation technique revealed a mean diastasis rectus above the umbilicus of 2.733 ± 0.254 pre-intervention and 1.800 ± 0.362 post-intervention. Diastasis rectus behind the umbilicus, before to intervention, measured 2.067 ±0.172, whereas post-intervention it measured 1.233 ±0.365. The diastasis rectus measured by calliper method above the umbilicus was 25.3197±0.8088 pre-intervention and 21.8583±0.8023 post-intervention. Diastasis rectus behind the umbilicus, prior to intervention, measured 21.9730±0.9814, whereas post-intervention it measured 19.0093±1.3659.

This study's results indicate that abdominal workouts significantly reduce diastasis recti in early postpartum women. It enhances abdominal muscle strength and reinstates postpartum abdominal functionality. Such exercises could be effective in narrowing inter-recti distance, and hence support the prescription of an exercise program for prevention or reduction of diastasis recti in postnatal women and useful in complications of diastasis recti.[6]

7. ***D.R. Benjamin et al. (2013)*** conducted a review to ascertain the impact of exercise in the antenatal and postnatal periods. This systematic review assessed eight trials of varying designs that investigated therapies designed to prevent and/or mitigate DRAM. Exercise was employed as an intervention in all trials, either independently or in conjunction with educational components and/or external support garments. The exercises prescribed designed to strengthen the primary support muscles. The research varied in terms of the parameters of exercise, such as the frequency, duration, delivery methods, and settings. The methodologies for measuring DRAM varied significantly among the studies. Two studies employed tape measures, three studies employed callipers (either digital or dial), and two studies did not specify the mode of measurement. Antenatal exercise decreased the prevalence of DRAM by 35% in three studies when contrasted with non-exercising controls. Compared to the control group that did not engage in any form of physical activity, the intervention group's antenatal period DRAM width was substantially reduced after a six-week course of abdominal strengthening exercises.

The objective of three trials was to reduce the width of DRAM by incorporating postnatal abdominal exercise. The randomised controlled trial evaluated the effectiveness of individualised abdominal and pelvic floor

exercises that were administered during two one-on-one sessions with a physiotherapist at 6 and 18 hours post-delivery. Measurements were conducted 6 and 18 hours after the delivery and 18 hours after the intervention. The control group experienced an average reduction in DRAM width of 0.17 cm (5%), while the intervention group experienced an average reduction of 0.44 cm (13%).

Current evidence indicates that non-specific exercise may or may not be beneficial in preventing or reducing DRAM during the antenatal and postnatal periods, as a result of the low quality of the current literature.[7]

TABLE SUMMARY OF LITERATURE REVIEW

Suhaila Shohaimi et al. (2023) conducted a randomized controlled trial to determine whether split tummy exercise would reduce diastasis recti among postpartum women prim gravidae with CASP score-8.[8] ***Iva Weingerl et al. (2022)*** reviewed the literature how conservative treatments affected diastasis recti in postpartum women and has CASP score 9.[5] ***Sandra Gluppe et al. (2021)*** conducted a systematic review Postpartum diastasis recti abdominis can be treated with abdominal and pelvic floor muscle exercise, with CASP score-8.[2] ***Nadia Keshwani et al. (2019)*** conducted a pilot randomized controlled trial to determine the impact of exercise therapy and abdominal binding in the management of diastasis recti abdominis in the early postpartum period with CASP score-8.[3] Ali A. ***Thabet et al. (2018)*** performed a randomised control experiment to find out how effective a regimen of deep core stability exercises is for postpartum women who have diastasis recti with CASP score-7.[1] ***Sanjivani Ramesh Khandale et al. (2016)*** performed a randomised controlled experiment to assess the impact of abdominal exercises on the reduction of diastasis recti in postnatal women with CASP score-8.[6] ***D.R. Benjamin et al. (2013)*** conducted a systematic review to ascertain the impact of exercise on diastasis of rectus abdominis in the antenatal and postnatal periods with CASP score-7.[7]

DISCUSSION

Physiotherapy may be an effective treatment for diastasis recti in postpartum women, according to this research review. Out of the seven studies that made up this literature review, four were RCTs, two were systematic reviews including meta-analysis, and one was just a review of the literature. The literature review utilised just seven of the seventy-two papers that were located.

Suhaila Shohaim reports that after completing the three-part STEP module facilitation, integration, and abdominal muscular strengthening the intervention group's DRA size decreased significantly by 6.17 mm. Therefore, the results show that exercise may be useful in treating DRA.[8]

Based on a meta-analysis of fourteen studies, Iva Weingerl concludes that prone planks are the most beneficial abdominal workouts for reducing DRA.[5] Sandra Gluppe's subsequent article indicated that rectus abdominus workouts were more successful than transverse abdominus exercises, curl-up training, and pelvic exercises.[2]

Both the abdominal binding alone and combination treatment groups showed improvements in body image after 6 months, according to the article by Nadia Keshwani. The combined treatment group showed an improvement in trunk flexion strength.[3]

There was a statistically significant reduction in inter recti separation with a deep core stability training regimen, as stated in the article by Ali A. Thabet.[1] In a paper by Sanjivani Ramesh Khandeli, it was shown that abdominal workouts can help reduce diastasis recti in early postpartum women. The study involved around 30 patients who were instructed to undertake a series of abdominal exercises.[6]

According to D.R. Benjamin's article, all of the therapies involved physical activity, with the majority of the exercises focussing on strengthening the abdominal muscles and core. Exercising before and after giving birth decreased the prevalence of DRA by 35% and, according to the data that is currently available, may also decrease the breadth of DRAM.[7]

Author	Intervention	Benefits	Level of Evidence
Suhaila Shohaimi et al (2023)	The STEP module includes three phases, (1) IsometricAbdominal Exercise; (2) Upper limb movements with isometric abdominal exercise; and (3) Alternate lower limb movements. All participants performed posterior pelvic tilts, pelvic clocks, bridging, crunches, planks, and Russian twists	There was a significant reduction of 6.17mm in DRA size in the intervention group following the STEP module which included three phases, facilitation, integration, and strengthening of abdominal muscles. Hence proving that exercise could be used as a treatment for DRA	LEVEL II-RCT
Iva Weingerl et al (2022)	Study investigated the effect of Kinesio taping while two studies looked at neuromuscular electrical stimulation combined with exercise. Two intervention studies compared abdominal binding with exercise intervention.	Abdominal exercise programs are effective in treating DRA at various postpartum periods. There is evidence of the efficacy of electrical stimulation in combination with exercise.	LEVEL I- Meta-Analysis
Sandra Gluppe (2021)	Abdominal training, pelvic floor muscle training, or combination of both. either home exercise or in the presence of a therapist.	The abdominal exercises focused on rectus abdominus were found to be more effective in reducing DRA.	LEVEL I-Systematic Review
Nadia Keshwani *et al* (2019)	Included isolated activation of the transversus abdominis muscles, bent knee leg lifts in crook lying while maintaining a neutral lumbopelvic spine, eccentric trunk flexion exercises starting in sitting using a sheet/ towel to support the abdominal wall during the exercise and side planks with progressive variations along with abdominal binding and combination therapy.	After 6 months,positive effects on body image were observed in both the abdominal binding alone and combination therapy groups. A positive effect on trunk flexion strength (d=0.7) was observed in the combination therapy group.	LEVEL II-RCT
Ali A. Thabet et al (2018)	The patients in the first group underwent a deep core stability strengthening program which involved the use of abdominal bracing (a large towel or sheet secured around the abdominal section for each patient), diaphragmatic breathing, pelvic floor contraction, plank, and isometric abdominal contraction as well as the traditional abdominal exercise program.	Based on the results from this current study, a conclusion can be drawn that the deep core stability exercise program is effective in treating diastasis recti, improving the quality of life of postpartum women, and thus can be used as an alternative conservative therapy accompanying other therapeutic methods.	LEVEL II-RCT
Sanjivani Ramesh Khandeli et al (2016)	The subjects were instructed to do a set of abdominal exercises to correct their Diastasis Recti, which included static abdominal exercises, head lift with posterior pelvic tilt exercises,pelvic clock exercises, double straight leg raising exercises, plank exercises, and superman exercises superman exercises.	The result of this study shows that abdominal exercises are very effective in reducing diastasis recti in early postpartum women. It helps to increase abdominal muscle strength and restoring postpartum abdominal efficiency.	LEVEL II-RCT
D. R. Benjamin et al (2013)	All studies presented some form of exercise as an intervention alone or in combination with education and/or external support garments. Prescribed exercises mainly targeted abdominal muscles and core strengthening.	The available evidence showed that exercise during the antenatal period reduced the presence of DRAM by 35% and suggested that DRAM width may be reduced by exercising during the ante- and postnatal periods.	LEVEL I-Systematic Review

CONCLUSION

Results showed that postpartum women who had physical therapy for Diastasis Recti Abdominis had a significant improvement in their condition. The high frequency of DRA highlights the need for more investigation into potential therapies. Based on the research that is already out there, abdominal workouts are highly recommended as a means to decrease IRD. Since DRA has the potential to greatly affect postpartum women's quality of life, it is imperative that postpartum health care include screening techniques to evaluate both DRA and the structural integrity of the Linea alba. This would make it possible to identify DRA in women quickly, allowing them to get the help they need.

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Conflict of Interest: Nil

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