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Research Article

The Effect of Belly Binding and Abdomen Exercise on Reducing Diastasis Recti Abdominis in Postpartum Mothers

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Abstract

Aims : The purpose of this study was to see if belly binding and abdominal exercises may help reduce diastasis recti abdominis in postpartum women.

Methods : A quasi experiment with a One group Pretest Posttest Design was employed as the research approach. Respondents were 60 primiparous postpartum moms who were randomly assigned to one of two groups: 30 for belly binding treatment and 30 for abdominal exercises treatment, using the purposive sample technique.

Results : The findings revealed that belly binding had an influence on the decrease in DRA in postpartum women (p value = 0.000). Abdominal exercises had a positive effect on DRA in postpartum women (p value = 0.043). It is recommended that postpartum women employ belly binding and abdominal workouts to combat DRA.

Conclusion : Belly binding and abdominal exercises can help postpartum women overcome recti abdominis. Midwives are supposed to be able to give passive and active non-pharmacological midwifery treatment, such as belly bindings and abdominal exercises for postpartum women suffering from DRA.

Keywords:

Belly Binding, Abdomen Exercise, Diastasis Recti Abdominis, Postpartum

INTRODUCTION

Postpartum Midwifery Care is a key indication for increasing postnatal moms' quality of life. Currently, 70% of postpartum moms in underdeveloped nations do not receive postpartum care, and the most prevalent complaints are back discomfort, symphysis area pain, and sagging tummy. These problems stem from an unresolved Diastasis Recti Abdominis (DRA) condition (1). DRA is a condition in which the two abdominal muscles, left and right, are divided at the linea alba. DRA is examined by lying down and slightly raising the head position, palpating the degree of stretching of the abdominal muscles with two fingers, namely the middle and forefinger, placed under the navel to the symphysis pubis. If

the gap is less than two fingers broad, the results will be normal (2). Several studies have found that aberrant DRA occurs in 85% of postpartum women at the start of the puerperium and in 35-39% at 6 months postpartum (3). Pelvic muscle strength is highly influenced by decreasing abdominal muscle function, which is closely associated to DRA, and the consequences include urine incontinence, fecal incontinence, and pelvic organ prolapse as a result of pelvic muscle function loss. DRA is significant in the development, persistence, and occurrence of pelvic area repair problems (4).

DRA will have an effect on abdominal muscle weakening, such that the enlarged uterus during pregnancy and labor is not appropriately supported by the abdominal

muscles. In such a case, uterine overdistention will ensue, resulting in uterine atony and postpartum hemorrhage (1). The abdominal muscles are crucial for posture, trunk and pelvic stability, breathing, and abdominal muscular action. DRA has a negative impact on the organ functioning listed above. DRA has been treated using a variety of therapy modalities, including therapeutic activities (4). This technique tries to prevent and treat DRA-related problems.

Belly binding is a long strip of fabric, often two to four meters in length and twenty to thirty centimeters in width. There have been several developments in belly binding recently, including improved fabric options, more attractive designs, and more wearer comfort. The fabric has a strong woven texture, yet its pliability and ability to absorb sweat are the result of technological advancements. Belly bending functions as a wrapper or binder for the stomach in this context. Aside from its cosmetic benefits, belly binding can also be used to improve a person's posture (www.cappa.net, 2018). To counteract DRA, abdominal exercises are another option. The goal of this workout is to fortify the postpartum mother's pelvic and abdominal muscles with a series of motions focused on the abdomen (Hanan, 2013). DRA in postpartum women can be treated passively and actively with the help of belly binding and abdominal workouts, respectively. Given this context, the authors are curious about whether or not belly binding and other abdominal exercises can help postpartum mothers with diastasis recti (5,6).

METHODS

The research method used was a quasi experiment with a One group Pretest Posttest Design.

	Pre	Treatment	Post
Kel. A	01	Belly Binding	02
Kel. B	01	Abdominal exercises	02

Information :

01 = before treatment: DRA examination was carried out on the 2nd day

02 = after treatment: DRA examination was carried out on the 42nd day

Group A: 30 postpartum women who use belly binding from day 2-42, use it for 12 hours and rest for 12 hours

Group B: 30 postpartum women who did abdominal exercises from day 2-42, 3 times a week.

The research was conducted in March-November 2020 at PMB Anya Justianingrum, Amd.Keb. The sample in this study were postpartum women with primiparous puerperal inclusion criteria, history of prevaginal/normal delivery, BMI <30 kg/m², and were taken by purposive sampling. DRA before and after treatment was obtained through finger examination. Data were analyzed univariately and bivariately with the dependent t test.

RESULTS

The following were the findings of a study on the effect of belly binding and abdominal workouts on lowering DRA at PMB Anya Justianingrum, Amd.Keb from March to November 2020, with a sample size of 60 participants:

Table 1. Frequency Distribution of Respondent Characteristics

Variable	Belly Binding N=30		Abdomen Exercise N=30	
	F	%	F	%
Age				
Risky	8	26,7	14	46,7
No risk	22	73,3	16	53,3
Education				
Low	13	43,3	14	46,7
Tall	17	56,7	16	53,3
Work				
Work	17	56,7	17	56,7
Doesn't work	13	43,3	13	43,3

According to table 1, respondents in the belly binding and abdominal workouts group were 73.3% and 53.3% in the non-risk age category, namely 20-35 years, 56.7% and 53.3% had higher education, namely SMA and PT, and 56.7% are working mothers.

Table 2. Frequency distribution of DRA before treatment

Variable	Belly Binding N=30		Abdomen Exercise N=30	
	F	%	F	%
1 finger	14	46,7	13	43,3
2 fingers	14	46,7	13	43,3
3 fingers	2	6,7	4	13,3

DRA examination before treatment in the belly binding group found that most of the results were 1 and 2 fingers, namely as many as 14 respondents (46.7%) each, in the abdominal exercise group the results were the same 1 and 2 fingers, namely as many as 13 respondents each (43.3%).

Table 3. Frequency distribution of DRA after treatment

Variabel	Belly Binding N=30		Abdomen Exercise N=30	
	F	%	F	%
0 finger	10	33,3	2	6,7
1 fingers	20	66,7	18	60
2 fingers	0	0	10	33,3

DRA examination after treatment in the belly binding group found that most of the results were 1 finger, namely 20 respondents (66.7%), while in the abdominal exercise group it was the same, most of the results were 1 finger, namely 18 respondents (60%).

Table 4. Effect of Belly Binding on Reducing DRA

Belly Binding	Mean	SD	Different Mean	95% CI Confidence Interval	P Value	N
Before	1,60	0,621	0,867	0,705-1,029	0,000	30
After	0,73	0,521				

According to Table 4, the average DRA of mothers before belly binding from 30 respondents was 1.60 and 0.73 after belly binding. The mean difference between before and after was 0.867 with a 95% confidence level and the Confidence Interval (CI) value between 0.705 - 1.029 with statistical testing yielding p value = 0.000, indicating that there is a difference in DRA before and after belly binding.

Table 5. Effect of Abdominal Exercise on Reducing DRA

Abdomen Exercise	Mean	SD	Different Mean	95% CI Confidence Interval	p-Value	N
Before	1,80	0,714	0,13	0,004-0,262	0,043	30
After	1,67	0,661				

According to Table 5, the average DRA of moms before conducting abdominal workouts is 1.80, while the average after doing abdominal exercises is 1.67. The mean difference between before and after is 0.13 with a 95% confidence level, and the CI ranges from 0.004 to 0.262 with a P value of 0.043. It is possible to establish that DRA differs before and after abdominal exercises.

DISCUSSION

Characteristics of respondents

Participants in this study were predominantly in their 20s and 30s, the prime reproductive years. When considering the biological factors involved, the optimal time to reproduce is between the ages of 20 and 25. The immune system is still robust, and the body's organs continue to work normally; there is no evidence of degenerative disorders like high blood pressure, diabetes, or others (7). The responders had a high level of education, with the vast majority having completed either a SMA or a PT. The goal of any educational endeavor should be to bring about change in the minds and actions of the

persons being educated. Education's benefits include making people more open-minded and allowing them to think more freely (7).

The goal of formal education should be to help each student develop into an individual who can think critically about the world around him. Education is the process of influencing the beliefs and actions of an individual or group through formal or informal instruction. One of the factors taken into account by the social structure model is educational attainment. It is common knowledge that people of varying levels of education have distinctive habits when it comes to health literacy and behavior. The more educated a person is, the less likely they are to listen to what they are told. Therefore, the more one learns, the less their education will impede the growth of their character in accordance with the excellent principles they are taught (8). The majority of those who answered are moms who have jobs. People perform labor in exchange for monetary and intangible benefits. One's line of work can affect their immune system and their overall health. Whether or not a person

is willing to pay for a service is related to their employment status (9,10).

The Effect of Belly Binding on the Decrease in DRA

Thirty postpartum women participated in the study, and the average DRA before and after belly binding was 1.60 and 0.73, respectively. We may conclude that there is a difference in DRA before and after belly binding since the mean difference was 0.867 with a 95% confidence level and the Confidence Interval (CI) value between 0.705 and 1.029 with the results of statistical tests produced p value = 0.000. Belly binding has been shown to reduce postpartum depression and anxiety in women. Long-term stretching of the abdominal wall, combined with the gravitational influence of the enlarged abdomen, causes diastasis of the rectus abdominis muscles in pregnant women, leaving the peritoneum, thin fascia, and skin as the only components of the abdominal wall in the midline. Constant discomfort in the buttocks, lower back, and legs might result from these alterations. Abdominal stretching results in the development of red lines (striae gravidarum) caused by the synthesis of new collagen tissue. It can take weeks or months for loose and sagging skin to tighten again after giving birth, and striae lines to fade (11).

Mechanical stretching of the abdominal wall, in addition to hormonal effects on the linea alba, causes diastasis recti abdominis. Multiparity, big birth weights, multiple pregnancies, polyhydramnios, weak abdominal muscles, and poor posture are all risk factors. Collagen problems are another contributory factor. Pregnancy causes a weakening and thinning of connective tissue due to the increased abdominal pressure. Back discomfort and other postural alterations may result from the added stress this places on the body (12). Lower back pain, bad posture, flatulence, constipation, and pelvic floor difficulties are also frequent signs of DRA, but a stomach that does not flatten after delivering birth is the most

telling sign. Many health issues, including pelvic pain, back pain, SPFD (sacroiliac joint dysfunction), urine incontinence, pelvic organ prolapse, hernia (in extreme situations), and digestive issues, can stem from diastasis recti. Belly binding is a form of treatment that can be administered.

Belly binding is used to aid in the recovery of the mother's abdominal organs and muscles by providing gentle pressure and support. Sherry Ross, an experienced gynecologist and obstetrician, has recommended bengkung for the gentle treatment of loose skin on the abdomen. The uterus contracts more rapidly because to this pressure. When used correctly, belly binding can lessen discomfort, free up restricted movement, and strengthen the pelvic floor. Bengkung was found to have no negative effects on the health of the mother, according to the study. Bengkung was used to cover up the mother's extended stomach after giving birth. Belly binding is recommended for new mothers to help heal the abdominal muscle separation known as diastasis recti (13).

Effect of Abdominal Exercise on Decreased DRA

The average DRA for postpartum women was 1.80 before beginning abdominal workouts, and dropped to 1.67 afterward. P = 0.043 indicates a 95% confidence interval (CI) between 0.004 and 0.262 for the mean before-and-after difference of 0.13. Performing abdominal exercises leads to a different DRA than not. This clarifies why abdominal exercises are effective in lowering DRA.

Several studies have been conducted to treat DRA, including the use of electrical stimulation and active exercises involving the abdominal muscles, but the results of using electrical stimulation are not better than abdominal muscle exercises (14). Changes in the abdominal muscles during pregnancy in the form of separation of the front abdominal wall muscles are possible until the mother after delivery. Results The study to examine the effect of abdominal

muscle exercises on DRA, showed evidence that abdominal muscle exercises in normal postpartum women for 4 weeks had the effect of significantly reducing DRA. Furthermore, abdominal exercises can accelerate the reduction of DRA by up to 41% (3).

DRA can also cause aesthetic problems in addition to other physical problems, so it is important to do prevention or therapy. Abdominal muscle exercises that are carried out regularly and continuously have an impact on increasing muscle performance such as elasticity, strength and muscle endurance thereby helping to reduce DRA (4). Good condition of the abdominal muscles helps to increase back stability which reduces the risk of lower back pain. Abdominal exercises are a very important factor in helping reduce DRA (14). The use of belly binding and abdominal exercises had an effect on reducing DRA, and the reduction in DRA with belly binding was greater than with abdominal exercises, this can be seen from the results of the difference in mean belly binding of 0.867 and abdominal exercises of 0.13.

CONCLUSION

Belly binding and abdominal exercises can help postpartum women overcome recti abdominis. Midwives are supposed to be able to give passive and active non-pharmacological midwifery treatment, such as belly bindings and abdominal exercises for postpartum women suffering from DRA.

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