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The Effectiveness of Using Custom Made Soft Corset Model Towards Abdominal Circumference in Postpartum

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ABSTRACT

Background:
During the postpartum period, mothers often seek to maintain abdominal slimness by utilizing compression garments like *stagen* or *bengkung*. However, advancements in textile technology have led to a decline in the popularity of *stagen*, with corsets emerging as a preferred alternative due to their perceived practicality. *Corsets*, known for their flexible yet durable woven texture, serve as effective abdominal binders, aiding in both aesthetic preservation and posture

Purpose: This study aimed to evaluate the effectiveness of custom-made soft corsets in reducing abdominal circumference among postpartum mothers. The findings are anticipated to offer insights into the comfort and efficacy of using these corset models to promote abdominal muscle tightening in postpartum individuals.

Methods: The design is quasi-experimental. Data analysis includes univariate analysis in the form of respondent characteristic data and multivariate analysis with General Linear Model Repeated Measures (GLM RM).

Results: The difference in average abdominal circumference in the intervention group decreased, namely in measurement I of 89.4 cm (SD = 8.56), measurement II of 77.67 (SD = 7.51) cm and measurement III of 69.67 cm (SD = 8.41), while low back pain of measurement I of 2.73 (SD = 0.46), measurement II of 1.80 (SD = 0.56) and measurement III of 0.40 (0.51).

Conclusion: Custom made soft corset treatment for postpartum mothers proved to be more effective in reducing the size of abdominal circumference, namely in the results of the analysis of the interaction between the second and third measurements, seen from a steeper slope, and in low back pain measurements seen from a steeper slope between the first and second measurements.

Keywords: *custom made soft corset; abdominal circumference; postpartum*

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BACKGROUND

The puerperium is is the period of adjustment after childbirth during which the mother's reproductive system returns to its normal prepregnant state. It generally lasts six to eight weeks and ends with the first ovulation and the return of normal menstruation (Chauhan & Tadi, 2022). Over the weeks and months after giving birth, the body will undergo various changes. Initially, the stomach may still look like a pregnant person, but slowly return to normal so that the mother experiences a sagging stomach because it takes time to return to the size before pregnancy (Asadi et al., 2020).

Dissatisfaction with the body in the mother after childbirth due to pregnancy brings changes in body size and shape that affect the physical condition that appears from the outside in a postpartum mother (Quartamerti, 2019).This is supported by research literature which suggests that 75% of young postpartum adult women are nervous about their weight and 75% are worried about the possibility that their bodies will return to normal as before pregnancy. Negative body image in young adult women postpartum causes a desire to have an ideal body shape and size which leads to dietary behavior (Dolde et al., 2019).

Changes that occur in postpartum are drastic changes in diastasis rectus abdominis in postpartum mothers. In this condition, rectus abdominis diastasis (DRA) has the opportunity to interfere with activity, usually mothers do not complain about pain when rectal diastasis occurs happen (Asadi et al., 2022). But mothers will feel insecure about body shape when observing bulging abdominal muscles, for example when sitting, coughing, laughing, or when doing daily activities. Due to the condition of body shape that changes drastically after giving birth, mothers will try to maintain the slimness of the body and stomach by continuing to use *stagen* or *bengkung* (Irnawati & Azzahroh, 2022).

Along with the development of technology in the field of textiles, the need for *stagen* decreased because people prefer to use corsets that are considered more practical than *stagen. Stagen* is a long cloth that has a width of about 15 cm and a length of approximately 5-15 meters (Nurhayati et al., 2020).This cloth is commonly used by Javanese people in addition to postpartum mothers as well as to complement traditional clothing and do this by wrapping a circle around the stomach and its use becomes rather tight and stiff so makes the mother feel inflexible in moving (Andhikatias et al., 2021). Corsets are a type of flexible fabric and can stretch but with a strong woven texture. In use, the corset serves as a stomach wrap or stomach binder (Rahayu, 2018). But the use of the corset is not only to maintain beauty but also beautify the wearer's posture. Based on the results of written work that has been done (Quartamerti, 2019) most mothers wear corsets after giving birth, since then even until now many pregnant women wear corsets after giving birth (Faradilla, 2017).

Furthermore, with the use of custom-made soft corset models made of polyester mesh material, it is expected to provide comfort and effectively shrink or tighten the abdominal muscles of postpartum mothers and reduce low back pain during proper and correct use.

OBJECTIVE

This study aimed to evaluate the effectiveness of custom-made soft corsets in reducing abdominal circumference among postpartum mothers. The findings are anticipated to offer insights into the comfort and efficacy of using these corset models to promote abdominal muscle tightening in postpartum individuals.

METHODS

The design is quasi-experimental. Data analysis includes univariate analysis in the form of respondent characteristic data, and multivariate analysis with General Linear Model Repeated Measures (GLM RM). The population and samples in this study are all postpartum mothers who gave birth in the Cilandak Health Center area in July – November 2023. Samples are taken by quota sampling, which is carried out by determining a number of samples in quotum or ration, with a minimum sample of the intervention group of 15 people, intervening in the form of the use of Custom made soft corsets for postpartum mothers, namely by measuring the abdominal circumference and spinal height in mothers using the size of the centimeter band to make a special corset according to each size and a control group of 15 people carried out using a corset that is usually worn by mothers.

Data collection was obtained directly from respondents (primary data) using questionnaire sheets / observation sheets as well as cm measuring tapes to measure abdominal circumference and height of spinal size needed in the use of custom-made soft corsets. To monitor the provision of interventions is carried out using observation sheets. This sheet is filled in by the mother herself and monitored by a field assistant officer (enumerator). Measurements were made 3 times, namely measurement I was carried out at one week postpartum, measurement II at a visit of 1 month postpartum and measurement III at the second month postpartum, using centimeter tape on the observation sheet and measurement sheet. Measurements are carried out by field officers by recording on the data collection form.

This research was conducted after the research protocol received approval from the research ethics committee and the identity of all respondents will be kept confidential. Approval for the ethics review in this study was obtained from the head of the ethics review commission of the Poltekkes Kemenkes Mataram with the number: LB.01.03/6/305/2023 dated July 10, 2023

RESULTS

Table 1 shows that the average abdominal circumference of the intervention group decreased, namely in measurement I of 89.4 cm (SD = 8.56), measurement II of 77.67 (SD = 7.51) cm and measurement III of 69.67 cm (SD = 8.41), while in the control group the average of measurement I was 92.13 cm (SD = 10.72), measurement II of 86.33 cm (11.97) and measurement III of 83.67 cm (SD = 11.45).

Table 1. Distribution of abdominal circumference differences in measurements I, II and III in the intervention group and control group

Variable	Intervention (n=15)		control (n=15)	
	Mean	SD	Mean	SD
Abdominal circumference :				
Measurement I	89,4	8,56	92,13	10,72

Measurement II	77,67	7,51	86,33	11,97
Measurement III	69,67	8,41	83,67	11,45

Contrast analysis is carried out by going through 2 procedures, namely statistical test of comparison between contrast, and by plot analysis of contrast comparison between the two groups. The difference in the effectiveness of treatment in decreasing abdominal circumference scores was seen from the analysis of interactions between groups and decreasing scores. There are differences in abdominal circumference at the three levels of measurement, this is indicated by a significant value of <0.0001 in the abdominal circumference variable. The partial eta squared value showed a significant difference in abdominal circumference scores at all three measurement levels is 0.903, which means that the variation in the variable value of abdominal circumference can be explained as much as 90.3%. The significance value on the interaction variable between abdominal circumference and group is 0.0001 shows that there is an interaction between abdominal circumference and group, which means that the difference in effect between treatment / case and control in reducing abdominal circumference. The analysis could account for the variation in these interactions by 59.2%.

Based on the plot analysis in the graph below, it can be seen that the treatment using custom made soft corset is better in shrinking the size of abdominal circumference, which is between the second and third measurements, seen from a steeper slope. This shows that the use of custom-made soft corsets is more effective in reducing abdominal circumference compared to the use of ordinary corsets.

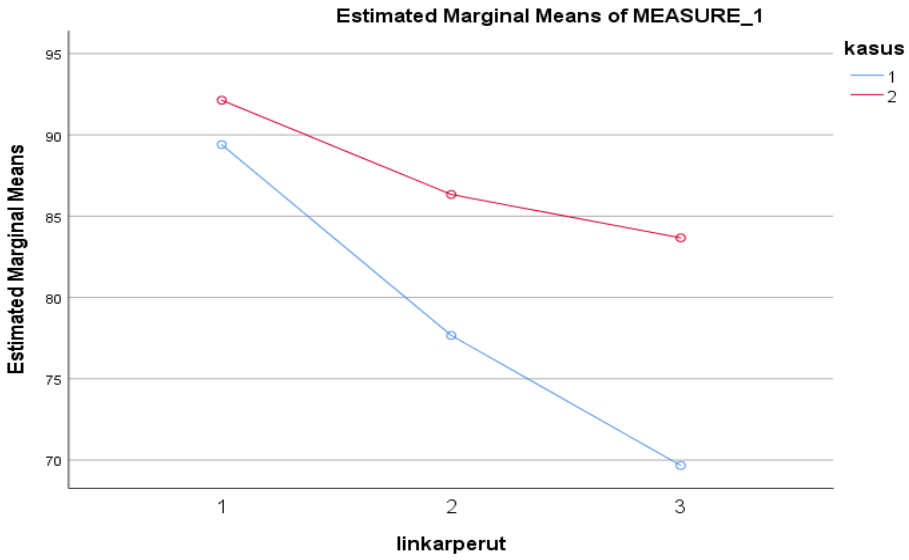


Figure 1. Estimated Marginal Means of Measure 1

DISCUSSION

The findings of this study provide compelling evidence regarding the efficacy of custom-made soft corsets in reducing postpartum abdominal circumference when compared to conventional corsets. Through a meticulous three-month investigation, both

intervention and control groups underwent monthly abdominal circumference measurements, revealing a substantial decrease among participants in the intervention group. Specifically, measurements exhibited a progressive reduction from 89.4 cm (SD = 8.56) in the initial measurement to 77.67 cm (SD = 7.51) in the second measurement, further declining to 69.67 cm (SD = 8.41) in the third measurement. This observed trend suggests a tangible benefit associated with the utilization of custom-made soft corsets in postpartum abdominal circumference reduction.

The superior effectiveness of custom-made soft corsets is further corroborated by previous research conducted by Choo and Chang (2020), affirming the notion that tailored interventions yield more favorable outcomes in postpartum care (Choo & Chang, 2020). These corsets, meticulously crafted from polyester mesh, embody a fusion of super-soft, durable, lightweight, and flexible materials, ensuring optimal comfort for wearers. Notably, their design incorporates features such as straps and back reinforcement structures with aluminum inserts, which not only enhance comfort but also promote better posture and alleviate back pain—a common postpartum concern (Nurhayati et al., 2020).

Beyond their aesthetic function, custom-made soft corsets serve as multifaceted tools in improving overall postpartum well-being. By providing structural support to the abdomen and back, these garments contribute to postural correction and alleviate discomfort associated with childbirth (Amanda et al., 2023). Moreover, their lightweight and flexible nature ensures ease of wear, allowing mothers to engage in daily activities with minimal hindrance. This versatility underscores the holistic approach to postpartum care facilitated by custom-made soft corsets (Andini, 2015).

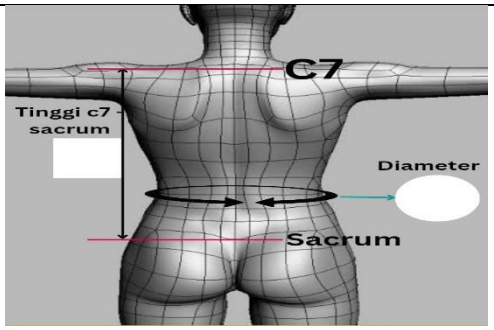
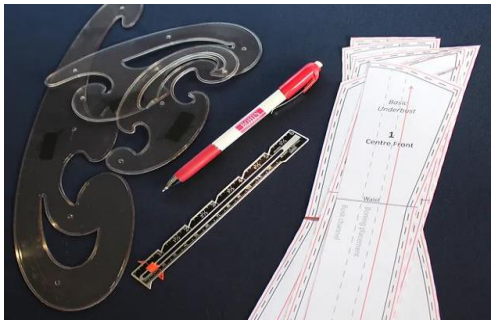
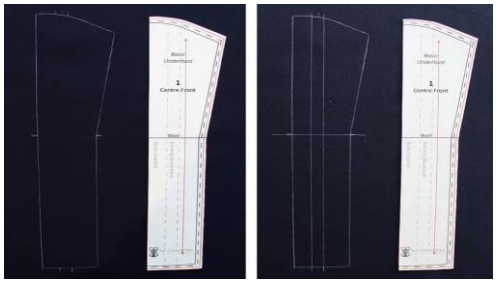
The adoption of custom-made soft corsets represents a promising avenue in postpartum care, offering a comprehensive solution to abdominal circumference reduction and postural improvement (Irnawati & Azzahroh, 2022). This study underscores the importance of tailored interventions in addressing the unique needs of postpartum mothers, recognizing the potential of innovative textile technologies in enhancing maternal well-being (Niza & Widya Sari, 2021). As such, future research endeavors may delve deeper into the long-term effects and patient satisfaction associated with the use of custom-made soft corsets, providing further insights into their role in postpartum recovery. By exploring these avenues, we can continue to advance our understanding and approach to postpartum care, ultimately enhancing the well-being of mothers during this crucial period (Rahayu, 2018).

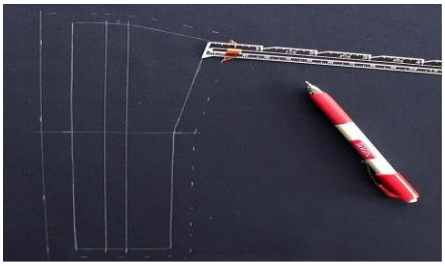
The findings of this study not only highlight the efficacy of custom-made soft corsets in reducing postpartum abdominal circumference but also shed light on the importance of personalized interventions in maternal care. By tailoring interventions to meet the specific needs of postpartum mothers, healthcare providers can optimize outcomes and enhance patient satisfaction (Asadi et al., 2022). Custom-made soft corsets, with their ability to provide targeted support and comfort, exemplify the potential of personalized approaches in promoting maternal well-being. This underscores the significance of considering individual factors and preferences in the design and implementation of postpartum care strategies (Sumarni & Nahira, 2022).

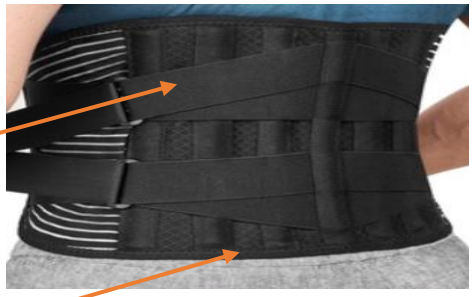
Moreover, the incorporation of innovative textile technologies in the development of custom-made soft corsets underscores the evolving landscape of postpartum care (Amanda et al., 2023). As advancements in materials and design continue to progress, the potential for improving patient outcomes and experiences grows exponentially. For instance, the integration of breathable and moisture-wicking fabrics in custom-made soft

corsets not only enhances comfort but also mitigates the risk of skin irritation and infection—a common concern in postpartum care. Thus, by embracing technological innovations and tailoring interventions to individual needs, healthcare providers can revolutionize postpartum care delivery and foster improved maternal outcomes.

The process of making corsets made of polyester nylon mesh:

No	Description	
1	Measurement of abdominal circumference and spinal height	
2	Corset pattern making and blueprint	
3	Blue print from front, side and back	
4	Client size adjustment with blueprints	

5	Transfer blueprints to base materials	
6	Base material cutting and reinforcing structure	
7	Cutting polyester-nylon mesh material according to blueprint	
8	Pieces of polyester material ready for sewing	
9	Sewing process between polyester material and reinforcing structure	
10	Sewn girdle structure	

11	Installation of aluminum reinforcement structures on the spine and finishing	
12	Aluminum material is attached to the spinal structure to maintain posture and body shape	
12	The corset is ready for use	

CONCLUSION

The corset model in this study was specifically designed for postpartum mothers made of polyester mesh, where the nature of the fabric is super soft, durable, lightweight, flexible and flexible and comfortable to wear. This corset uses comfortable and smooth material, and has 1 strap. 3. Custom-made soft corset treatment for postpartum mothers has been shown to be more effective in reducing the size of abdominal circumference by using it daily for three months**.**

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