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A Comparison of the LATCH Scores between Groups of Breastfeeding Women Using and Not Using a Nursing Pillow: A randomized, controlled trial

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ABSTRACT

Objectives: To investigate if the U-shaped nursing pillow can improve the LATCH scores in the postpartum breastfeeding mothers.

Materials and Methods: Postpartum women who had an uncomplicated vaginal delivery and intended to breastfeed were eligible. Mothers who had no contraindications to breastfeeding were randomized into two groups: the nursing-pillow intervention group and the control group. All participants underwent breastfeeding education and training regarding the proper body position. They used a modified cradle technique 2-4 hours postpartum under the guidance of a well-trained breastfeeding nurse. The mothers in the intervention group were instructed to use the U-shaped nursing pillow, size 60 x 60 cm, with 25 - 30 cm thickness during every breastfeeding while they were in the maternity ward. The LATCH scores were assessed at 48 hours postpartum. The primary outcome was a mean difference in the LATCH scores between the groups.

Results: A total of 48 eligible mothers were randomized into two groups: 24 in the nursing-pillow intervention group and 24 in the control group. The LATCH scores of the women who used a nursing pillow were significantly higher. The mean difference was 0.48 (95% confidence interval 0.06-0.90, p = 0.027).

Conclusion: The groups of breastfeeding women using the U-shaped nursing pillow had higher LATCH scores than the control group.

Keywords: nursing pillow, breastfeeding practices, LATCH score.

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การศึกษาเปรียบเทียบคะแนนการเข้าเต้า (LATCH score) ในสตรีให้นมบุตรระหว่างการให้นมบุตรโดยใช้หมอนรองให้นมบุตรกับการให้นมบุตรโดยไม่ใช้หมอนรองให้นมบุตร: การทดลองแบบสุ่มและมีกลุ่มควบคุม

ศุภกิจ ศิริกิจขจร, เมสิตา สุขสมานวงศ์

บทคัดย่อ

วัตถุประสงค์: *เพื่อเปรียบเทียบคะแนนการเข้าเต้า (LATCH score) ในสตรีให้นมบุตรระหว่างการใช้หมอนรองให้นมบุตรกับการให้นมโดยไม่ใช้หมอนรองให้นมบุตร*

วัสดุและวิธีการ: *ทำการศึกษาในกลุ่มสตรีหลังคลอดที่คลอดบุตรทางช่องคลอดที่โรงพยาบาลศูนย์การแพทย์สมเด็จพระเทพรัตนราชสุดาฯ สยามบรมราชกุมารี และไม่มีภาวะแทรกซ้อนหลังคลอด ซึ่งสตรีที่ตั้งใจเลี้ยงลูกด้วยนมแม่และไม่มีข้อห้ามในการเลี้ยงลูกด้วยนมแม่ จะถูกแบ่งเป็นสองกลุ่มแบบสุ่ม คือ กลุ่มที่ใช้หมอนรองให้นมในการให้นมบุตร และกลุ่มที่ไม่ใช้หมอนรองให้นม โดยสตรีหลังคลอดทุกรายจะได้รับคำแนะนำและช่วยเหลือในการเข้าเต้า รวมถึงการจัดท่าทางในการให้นมอย่างถูกต้อง คะแนนการเข้าเต้าจะถูกประเมินที่ 48 ชั่วโมงหลังคลอด และคะแนนการเข้าเต้าของทั้งสองกลุ่มจะนำมาเปรียบเทียบทางสถิติ*

ผลการศึกษา: *สตรีหลังคลอดจำนวน 48 คน ได้รับการแบ่งกลุ่มแบบสุ่มเป็น 2 กลุ่ม กลุ่มละ 24 คน คือ กลุ่มที่ให้นมโดยใช้หมอนรองให้นมบุตร และกลุ่มที่ไม่ได้ใช้หมอนรองให้นมบุตร พบว่า คะแนนการเข้าเต้าของกลุ่มที่ใช้หมอนรองให้นมบุตรสูงกว่าอย่างมีนัยสำคัญทางสถิติ โดยมีผลต่างของค่าเฉลี่ยของทั้ง 2 กลุ่มเท่ากับ 0.48 (95%Confidence interval 0.06-0.90, p = 0.027).*

สรุป: *คะแนนการเข้าเต้าของกลุ่มที่ใช้หมอนรองให้นมบุตรสูงกว่ากลุ่มที่ไม่ได้ใช้หมอนรองให้นมบุตรอย่างมีนัยสำคัญทางสถิติ*

คำสำคัญ: *หมอนรองให้นมบุตร, คะแนนเข้าเต้า, การเลี้ยงลูกด้วยนมแม่, LATCH score*

Introduction

The World Health Organization (WHO) has encouraged exclusive breastfeeding for at least six months after child delivery[1]. Breastmilk contains enriched nutrients that support growth, cognitive function, and future health throughout one's life[2]. Precise and correct breastfeeding techniques help the mother to continue breastfeeding for at least six months. The LATCH score is one of the best predictors of breastfeeding effectiveness[3]. The score can also predict compliance with adequate exclusive breastfeeding[4-7]. The appropriate breastfeeding techniques allow the mother to feel comfortable and relaxed because the back, feet, and breasts are well-rested. The fetal position matters, as well. The fetus's body should be on a single axis, with head and body support, and the body should contact the mother[8-10].

During breastfeeding, almost women reported deep pain in the lower abdomen, low back, and breasts[11]. The reported lower back pain increased with each breastfeeding duration. The rate of low back pain was lower when lumbar supports were used during nursing. Moreover, the degree of low back pain decreased associated with the thickness of lumbar support[12]. A nursing pillow is one of the tools that may help improve the breastfeeding position. The current study showed a significant reduction in maternal discomfort during breastfeeding time among participants using a nursing pillow[13].

In current practice at the HRH Princess Maha Chakri Sirindhorn Medical Center, all postpartum women have to undergo breastfeeding education and be trained by a well-trained nurse. The mother can use a nursing pillow during breastfeeding if she wants. However, no previous study has shown the benefit of nursing pillows. We aimed to investigate if nursing pillows can improve the LATCH scores in immediate postpartum mothers.

Materials and Methods

This randomized control trial was conducted at the HRH Princess Maha Chakri Sirindhorn Medical Center in Nakhon Nayok province, Thailand. The study period lasted from June to September 2021. The study had been approved by The Ethics committee of the Srinakharinwirot University, Faculty of Medicine, and registered at the Thai Clinical Trials Registry (registration number TCTR20220317001). The eligible population was all postpartum women who underwent an uncomplicated vaginal delivery and intended to breastfeed. The neonates had to weigh more than 2,500 grams at birth and had no birth complications or defects that could affect breastfeeding, such as cleft lip and palate, respiratory distress, or severe tongue tie. Also, the participants had to have no contraindications to breastfeeding. Informed consent was obtained from all participants. Postpartum women who refused to participate in the research, along with mothers who have breast or nipple problems, and whose infants were diagnosed with galactosemia, were excluded.

The sample size was calculated based on 0.05 of α error, 0.8 of power, a mean difference of 0.8, and a standard deviation of 0.9. Twenty percent dropped-out had been added. The total number of people in each group was 24.

The position of breastfeeding is one of the major confounding factors. The modified cradle technique is the simplified breastfeeding positions in which the mother uses one hand to hold the breast and the other to support the baby's head. This position is easy for beginners. All participants received breastfeeding education and proper body positioning in a modified cradle technique for 30 minutes at 2 - 4 hours postpartum under the guidance of a well-trained nurse. Breastfeeding was encouraged every 2 - 3 hours during the admission period.

All participants were randomized into two groups. The first group breastfed using the U-shaped nursing pillow, size 60 x 60 cm, with 25 - 30 cm thickness every time they breastfed their babies during hospital admission to help the mothers avoid bending their back during breastfeeding. The pillow is made of cotton or synthetic fiber which can support the weight well. This U-shape nursing pillow is accessible at local stores. The control group breastfed without a

U-shape nursing pillow. However, there was the possibility of using other kinds of pillows during admission. The participants in both groups were helped to breastfeed in a comfortable, modified cradle position by a well-trained nurse. The quality of the breastfeeding was evaluated at 48 hours postpartum using LATCH scores that included a latch, audible, a type of nipple, a comforting breast, and nipple hold as described in Table 1[14]. The scores were measured by two well-trained nurses. Neither of them knew the score given by the other. Concerning not being able to blind the intervention, bias was therefore reduced by retraining evaluators to set control standards for assessment results. The assessment has been revised and retested many times to control assessment results to the same standard before the beginning of the study. We assessed the LATCH score 48 hours postpartum because there is evidence that the LATCH score 48 hours after birth can predict the rate of exclusive breastfeeding at 6 weeks postpartum[4-6] and identified mothers who need breastfeeding support before discharge from the hospital to prevent early breastfeeding cessation. The flow diagram of participants throughout the study is shown in Fig. 1.

The secondary outcome was a fatigue level assessed by a visual analog scale which was assessed simultaneously with the LATCH scores.

The demographic data presented as mean and standard deviation, median and interquartile range or number and percentage. We used the intention-to-treat analysis method. A p value < 0.05 was considered statistically significant. We used the t-test to compare the LATCH score, and the fatigue level of those who used and did not use a nursing pillow. The statistical analysis was performed using SPSS software (version 23.0; SPSS Incorporated).

Table 1. LATCH scores[14]

LATCH score		Detailed
L = Latch	2	Grasps breast, tongue down and forward Lips flanged and has rhythmic suckling
	1	Repeated attempts Holds nipple in mouth Stimulated to suck
	0	Too sleepy or reluctant No latch obtained
A = Audible swallowing	2	Spontaneous or frequent audible swallowing
	1	A bit of audible swallowing with stimulation
	0	None
T = Type of nipple	2	Everted (after stimulation)
	1	Flat
	0	Inverted
C = Comfort	2	Soft, non-tender, intact nipple
	1	Filling Small blisters or bruises on the breasts Mild to moderate discomfort of nipples or breasts
	0	Engorged Cracked, bleeding, large blisters or bruises Severe discomfort
H = Hold	2	No assistance requirement for staff Mother can position or hold the baby
	1	Minimal assistance Teach one side and the mother does other Staff helps and the mother takes over the feeding
	0	Full assistance (staff holds the infant at the breast)

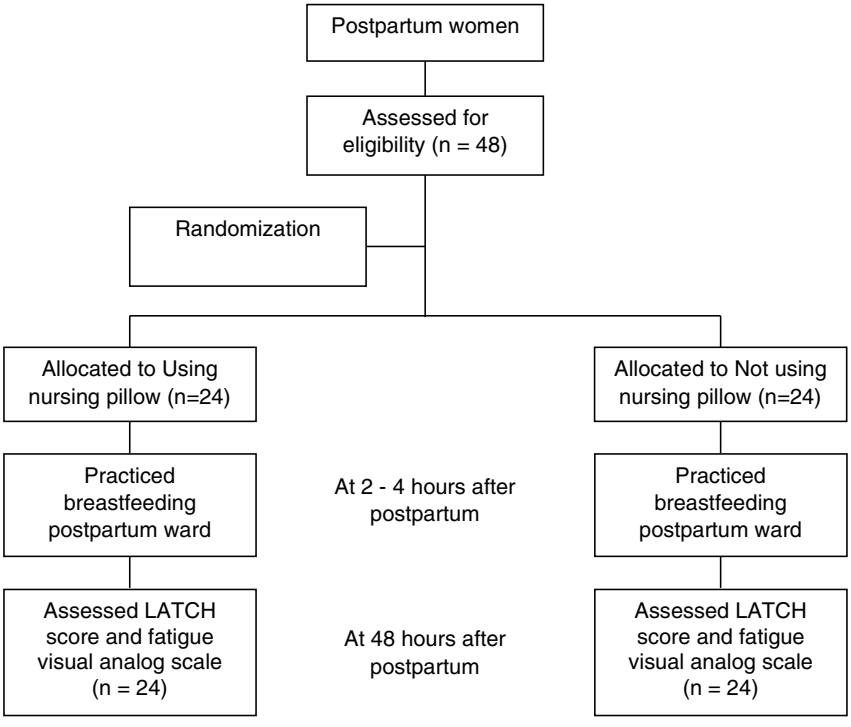

Fig. 1. Flow diagram of participants through the study.

Results

Considering all the data regarding the 48 postpartum women included in the study. The demographic data is shown in Table 2. The percentage of multiparous was 64.6%. The demographic data concerning the breastfeeding women who used and didn't use a nursing pillow was similar. There were no statistically significant differences in maternal age, occupation, marital status, religion, body mass index, gravida, nipple length, gestational age, and birth bodyweight.

The Mean LATCH score of breastfeeding women who used a nursing pillow was 8.48 ± 0.71. The mean LATCH score of breastfeeding women did not was 8.00 ± 0.74. The mean difference was 0.48 (95% confidence interval, 0.06 to 0.90; p = 0.027). The results are in Table 3. The primary outcome was statistically significant.

When further analyzing the data, the higher LATCH scores in the intervention group were attributable to the L-Latch, and A-audible swallowing. According to the L-Latch, 18 participants received full marks, compared to 15 in the control group. For the A-audible swallowing, 18 participants got full marks in the intervention group compared to 11 in the control group. However, it noted that the frequency of the highest scores of the C-Comfort in the intervention group was less than in the control group. The score of H-Hold was not different between the group.

The median and interquartile range fatigue visual analog scale of breastfeeding women who used a nursing pillow was 0.15 (0.0 - 1.1), while the median and interquartile range fatigue level of those who did not was 2.7 (1.25 - 3.7); p < 0.001. The results are shown in Table 4. The secondary outcome was statistically significant.

Table 2. Demographic data regarding breastfeeding women who used and didn't use a nursing pillow.

Demographic data	Used a nursing pillow (n = 24)	Didn't use a nursing pillow (n = 24)	p value
Age (years)	27.5±4.5	25.9± 5.2	0.26
Occupation, n (%)			0.16
Housework	4 (16.7%)	5 (20.8%)	
Student	0 (0%)	2 (8.3%)	
Employee	2 (8.3%)	7 (29.2%)	
Government officer	3 (12.5%)	1 (4.2%)	
Private business	9 (37.5%)	4 (16.7%)	
Private employee	6 (25%)	5 (20.8%)	
Marital status, n (%)			0.64
Married	21 (87.5%)	22 (91.7%)	
Single	3 (12.5%)	2 (8.3%)	
Religion, n (%)			0.303
Buddhist	17 (70.8%)	20 (83.3%)	
Muslim	7 (29.2%)	4 (16.7%)	
Body mass index (kg/m2)	22.6 (19.0-24.4)	19.9 (16.9-26.1)	0.99
Gravida, n (%)			0.76
Primigravida	9 (37.5%)	8 (33.3%)	
Multiparous	15 (62.5%)	16 (66.7%)	
Nipple length (mm)	10 (8.5-10)	10 (9-10.5)	0.95
Gestational age (weeks)	38.6 (37.9-39.2)	38.6 (37.9-39.2)	0.69
Birth weight (grams)	3031.7 ± 303.5	3025.4 ±324.3	0.95

Table 3. Comparisons of the LATCH scores between breastfeeding women who used and didn't use a using nursing pillow.

Outcome	Used a nursing pillow (n = 24) (mean ± SD)	Didn't use a nursing pillow (n = 24) (mean ± SD)	Mean difference	95% CI	p value
LATCH score	8.48 ± 0.71	8.00 ± 0.74	0.48	0.06 - 0.90	0.027

* Independent t-test
CI: confidence interval, SD: standard deviation

Table 4. Comparisons of the fatigue level between breastfeeding women who used and did not use a nursing pillow.

Outcome	Used a nursing pillow (n = 24) median (IQR)	Didn't use a nursing pillow (n = 24) median (IQR)	p value
Fatigue level	0.15 (0.0 - 1.1)	2.7 (1.25 - 3.7)	< 0.001

* Mann-Whitney U test
IQR: interquartile range

Discussion

Exclusive breastfeeding at least six months after birth is a strategic health policy. The correct breastfeeding technique is the crucial key to success. A LATCH score worldwide is used to assess breastfeeding quality. Many studies tried to find a way to improve a LATCH score that may advocate exclusive breastfeeding[15,16].

The nursing pillow is a popular household modality to correct maternal and infant positions during breastfeeding. We found that the postpartum women who used a U-shape nursing pillow had a statistically significant higher LATCH score. A reasonable explanation for these findings is that the nursing pillow helps support the infant's weight, allowing the head and body to stay on the same axis. An appropriate position improves breastfeeding comfort and results in the proper breastfeeding technique[17,18]. The mean difference was 0.48. It mainly increased from the L-Latch and the A-Audible swallowing. However, The LATCH scores differed statistically without clinical significance.

The Latch process consists of rooting, gaping, sealing, and sucking behavior. The previous study reported that proper suckling habits reduce nipple pain[8]. However, this study found that the proportion of the highest scores of C-Comforts in the control group was higher.

We also discovered that the postpartum women who used a nursing pillow had a fatigue level that was assessed by a visual analog scale significantly lower than those who didn't. The median fatigue level of breastfeeding women who used one was 0.15, whereas the other group averaged 2.7. The nursing pillow seems to help create a relaxed body position during breastfeeding. Such support decreases fatigue in the mother's arms, shoulders, neck, and back[19]. This finding correlated with a previous study that showed a significant decline in maternal discomfort among postpartum women using breastfeeding pillows[13].

The strength of our study was a randomized, controlled trial and the LATCH scores are a standardized criterion. We used the modified-cradle method in all participants to eliminate the potential confounding factor. The limitation of this study was that the intervention was not blinded; however, we had the LATCH scores determined by two well-trained breastfeeding nurses to minimize any bias. Several scoring tests were performed to ensure consistency before the beginning of the study. It is worth noting that there was also an opportunity of using the other types of pillows in the control group. This may result in the LATCH scores between the two groups not being much different.

For further study, we recommend randomized studies to compare different nursing pillows' LATCH scores and other additional relevant secondary outcomes, such as nipple pain and other lactation problems of all participants to cover all dimensions of the study results. Furthermore, other important variables related to successful breastfeeding might be needed, such as the start time of breastfeeding, frequency of breastfeeding.

Conclusion

The groups of breastfeeding women who used the U-shape nursing pillow had a higher LATCH score than the control group.

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Potential conflicts of interest

The authors declare no conflicts of interest.

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