

Breastfeeding Behavior and LATCH Score in Postpartum Mothers days 1-7 with Overweight and Obesity

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ABSTRACT

Background: Lifestyle changes during pregnancy tend to occur less frequently, and unhealthy eating patterns resulting from consuming fast food can trigger overweight and obesity. Existing research has revealed the influence of obesity on delayed lactogenesis II and low milk production but has not revealed the influence of obesity on breastfeeding behavior and the LATCH score as an early identification of breastfeeding success.

Purpose: This study aim to analyzing the differences between overweight and obesity on breastfeeding behavior and LATCH scores in postpartum mothers on 1–7 days.

Method: This research uses an analytical design with a observational approach. The sample for this study was all third-trimester primigravida mothers with normal pregnancies who checked themselves at the Kediri City Community Health Center and met the research inclusion criteria amount 86 samples. Breastfeeding behavior data and LATCH scores evaluate use quistionare were assessed on days 1, 3, and 7 days postpartum. Data analysis using SPSS version 26 with paired t test.

Results: The breastfeeding behavior scores of both groups did not different at 1 day (45 ± 3.34 vs. 45 ± 3.34 ; $P = 0.760$), 3 days (78 ± 5.78 vs. 67 ± 9.03 ; $P = 0.213$), and 7 days (10 ± 0.59 vs. 8 ± 0.50 ; $P = 0.087$). There was no difference in LATCH scores at 1 day (3 ± 0.67 vs. 3 ± 0.45 ; $P = 0.646$) and 3 days postpartum (78 ± 5.78 vs. 6 ± 0.03 ; $P = 0.098$), but at 7 days postpartum between the two groups were significantly different (10 ± 0.59 vs. 8 ± 0.50 ; $P < 0.001$).

Conclusion: The breastfeeding behavior and LATCH score can be used to predict difficulties in breastfeeding experienced by overweight and obese mothers postpartum for 1–7 days. Having an appropriate systematic assessment can help with timely intervention and improvements in breastfeeding techniques so increase breastfeeding success.

Keywords: breastfeeding behavior, LATCH score, overweight, obesity, postpartum 1-7 days

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BACKGROUND

Breastfeeding has benefits for maternal health, including reducing the risk of metabolic syndrome (Ballesta-Castillejos et al., 2020; Choi et al., 2017), type 2 diabetes mellitus (Rameez RM, Sadana D, Kaur S, Ahmed T, Patel J, Khan MS, Misbah S, Simonson MT, Riaz H, 2019), cardiovascular disease (Nguyen et al., 2019; Rameez RM, Sadana D, Kaur S, Ahmed T, Patel J, Khan MS, Misbah S, Simonson MT, Riaz H, 2019), and cancer (Anstey et al., 2017; Chowdhury et al., 2015) so that mortality can be reduced. (Bartick et al., 2017) The magnitude of the long-term maternal health benefits is proportional to the intensity and duration of breastfeeding. (Marshall et al., 2019) However, breastfeeding can be a problem due to an increase in body mass index (BMI) and body fat percentage in early pregnancy. Weight gain during pregnancy and not losing it after giving birth can cause obesity. Obesity can be determined based on calculating the Body Mass Index (BMI). BMI is defined as weight in kilograms divided by size in square meters (kg/m²). WHO has classified BMI as normoweight (18.5-24.9), overweight or overweight (25-29.9), obesity grade I (30.0–34.5), obesity grade II (35.0–39.9), and grade III obesity (> 40.0) (Ballesta-Castillejos et al., 2020).

Obesity before pregnancy is a high risk factor for gestational diabetes mellitus, hypertension syndrome, and fetal growth disorders, (Sun et al., 2020), the risk of premature birth (Li et al., 2020), and cellular oxidative stress. (Ballesteros-Guzmán et al., 2019) Research shows obesity is associated with low levels of exclusive breastfeeding. (Marshall et al., 2019) The stigma of obesity in postpartum and postpartum mothers can reduce the use of health care and increase stress, thus affecting lactation (Kair et al., 2019), low exclusive breastfeeding, and even the introduction of formula milk in the first 2 weeks postpartum. (Marshall et al., 2019).

Research shows that the prevalence of obese pregnant women is 28.9%, and is a trend that continues to increase globally. (Ballesta-Castillejos et al., 2020) According to the European Perinatal Health Report, the number of obese pregnant women is more than 30% in most countries in Europe. (Simko et al., 2019) Indonesia is also experiencing a nutritional transition, namely, increasing obesity. Basic Health Research data (Riskesdas) in 2018 showed that the number of overweight was 13.6% and obesity was 21.8%, and this increased from the 2013 Riskesdas, namely overweight at 11.5% and obesity at 14.8%. The prevalence of obese pregnant women in East Java is 23.4% (Ministry of Health of the Republic of Indonesia, 2018), while in Kediri City it was 30.4% in 2018 and increased to 32.3% in 2021 (Kediri City Health Service, 2022). Exclusive breastfeeding coverage is 68.1%, which is still below the East Java target of 71.1%.

Lifestyle changes during pregnancy tend to occur less frequently, and unhealthy eating patterns resulting from consuming fast food can trigger overweight and obesity. (Simko et al., 2019) The urgency of carrying out this research is due to the increase in obesity among pregnant women, and the coverage of exclusive breastfeeding is still low. Existing research has revealed the influence of obesity on delayed lactogenesis II and low milk production (Preusting et al., 2017) but has not revealed the influence of obesity on breastfeeding behavior and the LATCH score as an early identification of breastfeeding success. In addition, there is still limited evidence regarding the effect of obesity on breast milk, which has resulted in a lack of references for service providers to provide appropriate support and intervention for obese mothers so that they do not experience delays in lactogenesis II and avoid premature cessation of breastfeeding. The strength of this research is that the instruments used can be easily applied in health services so that they can detect

breastfeeding difficulties and problems as early as possible so that successful breastfeeding can be achieved. It is hoped that the results of the research will become recommendations for service providers to improve postpartum care, especially for overweight and obese mothers, so that they are motivated to breastfeed and can provide exclusive breastfeeding.

METHOD

This research uses an analytical design with an observational approach. The research was conducted at the Kediri City health centers from June to October 2023. The target population of this research is all postpartum obesity in Kediri City. The accessible population is all obese postpartum mothers who check themselves at the Kediri City Health Center.

The sample for this study was all third-trimester primigravida mothers with normal pregnancies who checked themselves at the Kediri City Community Health Center and met the research inclusion criteria amount 86 samples. The research inclusion criteria include willingness to be a respondent, age 20–35 years, having ANC at least once in the first trimester and once in the second trimester, LILA > 23.5 cm, BMI between > 25, no contraindications for hypertension, diabetes mellitus, and normal nipples.

This research variable includes:

Independent variable: overweight and obesity

Dependent variables: breastfeeding behavior, LATCH score

Confounding variables: breastfeeding support, age, parity, infection, nutritional status

The instruments used in this research include:

1. Questionnaire related to sociodemographics
2. Medical Outcomes Study Questionnaire: Social Support Survey (MOS-SSS) to assess social support, which includes emotional support, information support, material support, social interaction support, and affection support, consisting of 19 items with a rating of 1 to 5. The social support classification is not good if the score is 19–38, poor if the score is 39–57, good if the score is 58–76, and very good if the score is 77–98. The total reliability coefficient for social support is 0.96, with Cronbach's alpha coefficient for each domain (0.83-0.97). The validity of the MOS-SSS instrument has a positive and significant correlation between each domain and the other (0.69–0.82). (López & Cooper, 2011)
3. Breastfeeding Adaption Scale-Form Scale Questionnaire (BFAS-SF) questionnaire to assess breastfeeding behavior, consisting of 27 items that are assessed using a Likert scale of 1 to 5. Determining the classification of breastfeeding behavior is a score of 27–54: bad breastfeeding behavior; 55–81: poor breastfeeding behavior; 81–108: good breastfeeding behavior; and 109–135: very good breastfeeding behavior. The overall Cronbach's alpha value of the BFAS-SF is 0.82, and its subdimensions are 0.46-0.84. (Kim, 2019)
3. Observation sheet for LACTH score. The LATCH score is used to describe breastfeeding technique, which includes five areas: latching, swallowing, nipple type, comfort level, and position.(Shah et al., 2021)
4. Physical examination tools (tensimeter, stethoscope, thermometer, hammer hammer, LILA tape, doppler, hemometer, metline, and handscoon)
5. Supporting instruments in the form of a Maternal and Child Health book and a Resident Identity Card.

Data processing includes editing, coding, tabulating, data entry, and cleaning. The analysis of this research data includes:

1. Univariate analysis to describe the independent variables and dependent variables using a frequency distribution table.

2. Bivariate analysis to determine the difference between overweight and obesity on breastfeeding behavior and LATCH score using the paired t test

This research has received an ethical certificate from the Health Research Ethics Commission of the Indonesian STRADA Health Sciences Institute, number: 000342/EC/KEPK/I/08/2023.

RESULTS

The research results in this study were characteristics, breastfeeding behavior scores, and LATCH scores. Characteristic data includes age, gestational age, parity, history of hormonal birth control, diet, education, employment, income, family history, and family support. Breastfeeding behavior data and LATCH scores were assessed on days 1, 3, and 7 days postpartum.

Table 1 shows that 59 pregnant women are overweight and 27 are obesity. The average age of overweight pregnant women was 26.86 (SD 4.06) while that of obesity pregnant women was 30.67 (SD 3.55). There was a difference in age between the overweight and type I obese groups ($P < 0.001$). Based on education level, most of the education in the overweight and obesity group was secondary; there was no difference in the level of education in the overweight and obesity group ($P = 0.617$). Based on occupation, the majority are housewives (IRT), namely 59.3% in the overweight group and 77.8% in the obesity group, with family income above the minimum wage, namely 86.4% and 77.8%, respectively. It was concluded that there was no difference in employment ($P = 0.096$) and income ($P = 0.353$) in the overweight and obesity groups.

Table 1. Characteristics of respondents

Characteristics of respondents	Groups		P value
	Overweight (n=59)	Obesity (n=27)	
	n(%)	n(%)	
	mean±SD median;min-max	mean±SD median;min-max	
Age (years)	26,86±4,06 26;20-38	30,67±3,55 32;23-36	<0,001*
Gestational age (weeks)	35,44±1,95 35;32-40	34,89±1,85 35;32-40	0,157*
Paritas	2±0,57 2;1-3	2±0,65 2;1-3	0,530*
Hormonal contraception history			
- Uses	43(72,9%)	14(51,9%)	0,049***
- No	16(27,1%)	13(48,1%)	
Dietary habits			

- Not good	20(33,9%)	16(59,3%)	0,035***
- Good	39(66,1%)	11(40,7%)	
Educational levels			
- Intermediate	54(91,5%)	25(92,8%)	0,617**
- High	5(8,5%)	2(7,4%)	
Working status			
- Housewife	35(59,3%)	21(77,8%)	0,096***
- Work	24(40,7%)	6(22,2%)	
Income			
- < minimum wage	8(13,6%)	6(22,2%)	0,353**
- ≥ minimum wage	51(86,4%)	21(77,8%)	
Obesity history in family			
- No obesity	30(50,8%)	12(46,2%)	0,007**
- Obesity	29(49,2%)	14(53,8%)	
Family support			
- Not support	2(3,4%)	2(7,7%)	0,587**
- Support	57(96,4%)	24(92,3%)	

* Mann-Whitney test, significance level 0,05

** Fisher exact test, significance level 0,05

*** Chi square test, significance level 0,05

The data in this study also shows that 50.8% of the overweight group came from non-obese families, while 53.8% of the obese group came from obese families. The test results showed that there was a difference in family history of obesity in the overweight and obese groups ($P = 0.007$). Regarding family support, there was no difference in family support between the overweight and obese groups ($P = 0.587$). The average parity of the overweight and obesity group was parity 2, and there was no difference in parity between the two groups ($P = 0.530$). In terms of the history of hormonal contraceptive use, it was found that the majority of pregnant women had used hormonal contraception; in the overweight group, it was 72.9%, and in the obesity group, it was 51.9%. There was a difference in the history of hormonal contraceptive use ($P = 0.049$).

Table 2 shows that the breastfeeding behavior scores of the two groups did not differ at 1 day ($P = 0.760$), 3 days ($P = 0.213$), or 7 days ($P = 0.087$).

Table 2. Breastfeeding Behavior of Overweight and Obesity Groups

Breastfeeding Behavior	Groups		95% CI	t	P value*
	Overweight (n=59) mean±SD	Obesity (n=27) mean±SD			
Day 1	45±3.34	38±4.45	4.11-6.05	2.276	0.760
Day 2	78±5.78	67±9.03	1.02-1.89	4.483	0.213
Day 3	91±9.59	87±10.50	3.04-3.62	8.767	0.087

* Paired t test, significance level 0,05%

Table 2 shows that there is a difference in LATCH scores between the overweight group and obesity at 7 days postpartum ($P < 0.001$), but there is no difference in LATCH scores between the overweight group and obesity at first day postpartum ($P = 0.646$) or 3 days postpartum ($P = 0.098$).

Table 3. LATCH Scores for Overweight and Obesity Groups

LATCH Scores	Groups		95% CI	t	P value*
	Overweight (n=59) mean±SD	Obesity (n=27) mean±SD			
Day 1	3±0,67	3±0,45	0,25-0,40	-0,465	0,646
Day 3	7±0,78	6±0,03	1.02-1.89	4,465	0,098
Day 7	10±0,59	8±0,50	3,04-3,62	23,604	<0,001

* Paired t test, significance level 0,05%

DISCUSSION

At first day postpartum, the breastfeeding behavior scores of both groups were categorized as poor (45 ± 3.34 vs. 45 ± 3.34), while at 3 days postpartum, they were classified as poor (78 ± 5.78 vs. 67 ± 9.03). Higher scores indicate a higher adaptation to breastfeeding. On the first day postpartum, when entering the dependency period and still adapting to a new role, feelings of discomfort due to pain from stitches or fatigue cause postpartum mothers to still need the care and protection of other people. (Astutik, 2015) The research results showed that 26.9% of mothers did not control how much their baby breastfed, and 28% did not pay attention to whether the baby was showing signs of being full, and even expected the baby to drink a fixed amount during each breastfeeding session. (Hu et al., 2023).

At 7 days postpartum, the scores of both groups were in the good breastfeeding behavior category (91 ± 9.59 vs. 87 ± 10.50). The increase in breastfeeding behavior scores in both groups is assumed to be because postpartum mothers have been able to adapt to themselves and their babies. Postpartum mothers have returned home, so they have received positive support from the family. Greater breastfeeding support after birth, both in the hospital and after the mother returns home, can increase the mother's self-confidence and improve the experience, thereby having a positive impact on breastfeeding behavior. Mothers's behavior toward breastfeeding term babies during the first few days after birth has been proven to have a positive effect on subsequent breast milk production. (Kent et al., 2012, 2016).

There was no difference in LATCH scores at 1 day (3 ± 0.67 vs. 3 ± 0.45) and 3 days postpartum (78 ± 5.78 vs. 6 ± 0.03) in the two groups because both groups were still adapting

to the baby, so the process of attachment has not been able to take place properly. Mothers with a LATCH score ≥ 8 at 48 hours have a 3.6 times higher chance of providing exclusive breastfeeding at the end of 6 weeks postpartum (Sowjanya & Venugopalan, 2018). A LATCH score < 6 at 48 hours can be a significant indicator (a red flag sign) to intervene and promote exclusive breastfeeding. The LATCH assessment itself can be used as an educational tool to improve breastfeeding techniques and thereby increase breastfeeding success. (Vernekar P., Bhandankar M., 2023).

Research conducted in India on mothers who gave birth normally and SC showed that at 8 hours, the LATCH score was > 8 in babies who were born normally, and at 48 hours, the LATCH score increased in both groups. Babies born to multiparous mothers had higher scores at 48 hours than babies born to primiparous mothers. Mothers who had a LATCH score < 8 at 48 hours of intervention experienced an increase in breastfeeding rates at 6 weeks postpartum. (S. et al., 2019) A good LATCH score can support successful breastfeeding. Proper attachment plus the right position means that the baby can suck more optimally, so that breast milk intake can enter the baby's body more optimally. LATCH scores at 7 days postpartum between the two groups were significantly different (10 ± 0.59 vs. 8 ± 0.50). These results are in accordance with a prospective cohort study conducted in India on 93 mother-infants at term gestation. A LATCH score ≥ 6 at hospital discharge had the highest sensitivity (92.1%) and specificity (66.7%) for predicting breastfeeding success at 6 weeks postpartum (RR, 95% CI: 5.63 [4.32–12.65], $P = 0.0003$). (Shah et al., 2021) Systematic assessment of breastfeeding using the LATCH tool and timely initiation of appropriate actions to address identified problems will help increase exclusive breastfeeding rates at and after discharge from the hospital. (Rapheal et al., 2023) In this study, we only followed the baby's mother until the early postpartum period, so the possibility of some breastfeeding-related problems appearing later in the postpartum period could not be assessed. However, our study has the strength of fully assessing breastfeeding behavior scores and LATCH scores in the early postpartum period involving mother and baby so that it can detect as early as possible obstacles to breastfeeding.

CONCLUSION

The breastfeeding behavior and LATCH score can be used to predict difficulties in breastfeeding experienced by overweight and obese mothers postpartum for 1–7 days. Having an appropriate systematic assessment can help with timely intervention and improvements in breastfeeding techniques so increase breastfeeding success.

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CONFLICTS OF INTEREST

There are no conflicts of interest.

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