

Effects of teaching using the hands-off technique on breastfeeding success before discharge among postpartum mothers at the obstetrics and gynecology ward, Nakhon Phanom Hospital

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ABSTRACT

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Breast milk is crucial for an infant's immunity from birth and supports physical and mental health throughout life. The hands-off technique, which respects nursing ethics, encourages postpartum mothers to breastfeed and boosts their confidence in successful breastfeeding. This research utilized a prospective interrupted time design with the objectives to examine the impact of the hands-off technique on breastfeeding efficiency before discharge, and to compare mothers' breastfeeding confidence between the hands-off and traditional hands-on techniques. The study included 42 postpartum mothers who delivered normally between February and April 2024. Data were analyzed using descriptive statistics, independent t-test, two-sample Wilcoxon rank-sum test, and survival regression. Results indicated that most participants were aged 20-34 years, had a gestational age of over 37 weeks, and had infant birth weights above 3,000 grams. The hands-off technique reduced the time spent teaching until successful latch and the time to achieve a LATCH score of ≥ 8 . Mothers in the hands-off group showed a significant increase in confidence scores before discharge and achieved these scores in less time (time ratio of 0.63) compared to the hands-on group.

Keywords: hands-off technique; hands-on technique; breastfeeding; nursing ethics; advocacy

1. INTRODUCTION

Breast milk gives babies immunity from birth and is important for their physical and mental health as they grow up. Breastfeeding is good for both mothers and newborns. It helps prevent illnesses, keeps them healthy,

and makes the bond between mother and child stronger. This affects their overall well-being in many ways - physically, mentally, emotionally, socially, and spiritually (Khonsung et al., 2021; World Health Organization, 2023). Intharakasem et al. (2019) mentioned that successful breastfeeding was an indicator that a mother was fulfilling

her role effectively. It's an important first step for the baby to grow well, develop properly, stay alive, and have a good quality of life (Nuampa et al., 2022; World Health Organization, 2023; United Nations Children's Fund, 2018).

The United Nations Children's Fund (UNICEF) and the World Health Organization (WHO) recommend that mothers (1) initiate breastfeeding within one hour of the baby's birth; (2) only give breast milk for the first six months; and (3) keep breastfeeding for at least two years (UNICEF, FANTA, USAID, & WHO, 2017). However, a 2019 survey conducted by Thailand's The National Statistical Office, Thailand (2023) and UNICEF (2023) found that only 14% of babies were exclusively breastfed for the first six months. This situation is concerning globally, affecting both western and eastern countries, as breastfeeding is recognized as the natural and healthiest method for infant nourishment. Consequently, promoting breastfeeding has been a longstanding significant in public health policy. The objective is to increase the rate of exclusive breastfeeding during the first six months to at least 50% by 2025 (UNICEF, FANTA, USAID, & WHO, 2017). However, many countries, including Thailand, have not yet achieved this goal.

The 2022 Multiple Indicator Cluster Survey showed that in Thailand, only 28.6% of babies were exclusively breastfed. Information from Nakhon Phanom Hospital revealed that the breastfeeding rates when mothers left the hospital in 2021, 2022, and 2023 were 52.31%, 42.56%, and 53.09%, respectively. When they followed up with mothers until the babies were six months old, they found that only 22.36% were able to give just breast milk for the full six months. The follow-up showed that the problems causing breastfeeding to fail were such as the baby did not latching on correctly, which led to sore nipples; breasts getting too full of milk; the baby crying and not wanting to keep sucking; and the mother thinking that she did not have enough milk. This lack of confidence led mothers to rely on formula milk instead of exclusively breastfeeding for the first six months. These issues arise from a lack of adequate knowledge and skills related to breastfeeding among mothers (Ongprasert & Siviroj, 2021).

Successful breastfeeding relies on a range of critical factors. One of the most crucial is making sure the mother has the appropriate knowledge, skills, a good attitude, and confidence about breastfeeding (Charoensurasathon et al., 2019; Setthagraikul & Topothai, 2019). Nurses play a pivotal role throughout the continuum of care, from pregnancy through the postpartum period. Providing information on the benefits of breastfeeding, instructing on fundamental breastfeeding techniques, and offering support in addressing challenges are crucial in enhancing confidence, reducing concerns, and fostering a positive attitude towards breastfeeding. These measures contribute to a better understanding of breastfeeding's importance, thereby increasing the likelihood of successful breastfeeding outcomes (Hangchaovanich et al., 2013; Intharakasem et al., 2019; Siripattarakul Saenluang & Sanguansiritham, 2019).

Investigating the effectiveness of the hands-off technique in enhancing maternal self-confidence and preparedness for breastfeeding before discharge from the hospital is essential for facilitating successful breastfeeding and achieving breastfeeding goals. This approach also upholds maternal autonomy, supports the

mother's role in nurturing, and ensures that infants receive optimal nutrition for healthy growth and development.

2. MATERIALS AND METHODS

This research evaluated the effectiveness of the hands-off teaching technique (teaching individual mothers to breastfeed using the hands-off technique involved providing information and demonstrating how to hold the baby and latch the baby onto the breast using a doll and a breast model). Mothers were then encouraged to practice with their own baby simultaneously. The nurse avoided touching the baby or the mother's breast, but if necessary, touches were kept to a minimum with a friendly demeanor. Guidance was provided without giving commands or criticism if the mother struggled. Teaching continued until the mother could perform the task correctly on her own. Figure 1 using a prospective interrupted time design. It examined the effects of the hands-off method on breastfeeding success prior to hospital discharge among first-time mothers who had normal, full-term deliveries at the Obstetrics and Gynecology Ward of Nakhon Phanom Hospital between February and April 2024.

2.1 Population and sample

The population was first-time mothers of all ages who delivered at full term and were admitted to the Obstetrics and Gynecology Ward at Nakhon Phanom Hospital between February and April 2024. The sample size calculation was based on the pilot data from 16 cases utilizing the hands-on technique in December 2023, which yielded a LATCH score of 6.75 (± 1.13). They tested if the hands-off technique group's score would increase from that starting point to a score of 8 (± 1.13). Using a one-sided type I error of 5% and a power of 80% at a significance level of 0.05, they calculated that they needed 21 people in each group, for a total of 42.

Meanwhile, the hands-on technique was employed with 21 mothers, and the hands-off technique was used with another 21 mothers. All participants were first-time mothers of various ages who delivered at full term and were admitted to the Obstetrics and Gynecology Ward at Nakhon Phanom Hospital between February and April 2024.

2.2 Research instruments

The research instruments can be divided into two parts as follows: 1) Data collection tools: (1.1) A form was designed to record general information about the mother and baby. This form collected data on the mother's age, marital status, education, occupation, average monthly family income, planned maternity leave duration, and intended breastfeeding period. For the baby, data on sex, birth weight, and Apgar scores at 1 and 5 minutes were recorded. Data collection was conducted through interviews and a review of the medical records of both the mother and baby. (1.2) The LATCH score, which was a standard tool for measuring how well breastfeeding was going during the hospital stay and before the mother being discharged from the hospital. It consisted of five parts and scores from 0 to 10 points. A higher score means breastfeeding is going better. (1.3) A breastfeeding confidence questionnaire (6 questions) assessed the mother's self-confidence in various aspects of breastfeeding. It included questions on her confidence in holding the baby, getting the baby to latch, placing the

nipple in the baby's mouth, removing the nipple from the baby's mouth, and exclusively breastfeeding during the hospital stay. Responses were rated on a 3-point scale, resulting in a total score ranging from 6 to 18 points, with higher scores indicating greater breastfeeding confidence. 2) Research tools: (2.1) A comprehensive breastfeeding training plan - the plan included the benefits of breastfeeding, proper techniques for positioning the baby and achieving a good latch, methods for supporting the breast, techniques for removing the nipple from the baby's mouth, indicators of adequate milk intake, burping techniques, and strategies for managing sore nipples. (2.2) Individualized breastfeeding instruction using the hands-

off technique was provided to mothers. The nurse delivered information and demonstrated proper baby positioning and latching techniques using dolls and artificial breasts. Simultaneously, the mother practiced with her own baby. The nurse minimized physical contact with the baby and the mother's breasts, intervening only when necessary and in a supportive manner. The nurse provided guidance without being authoritative, refrained from criticism, and continued instruction until the mother could perform the techniques correctly and independently. (2.3) Breastfeeding practice equipment included dolls, artificial breasts constructed from stockings and synthetic fibers, and pillows or blankets for positioning support.

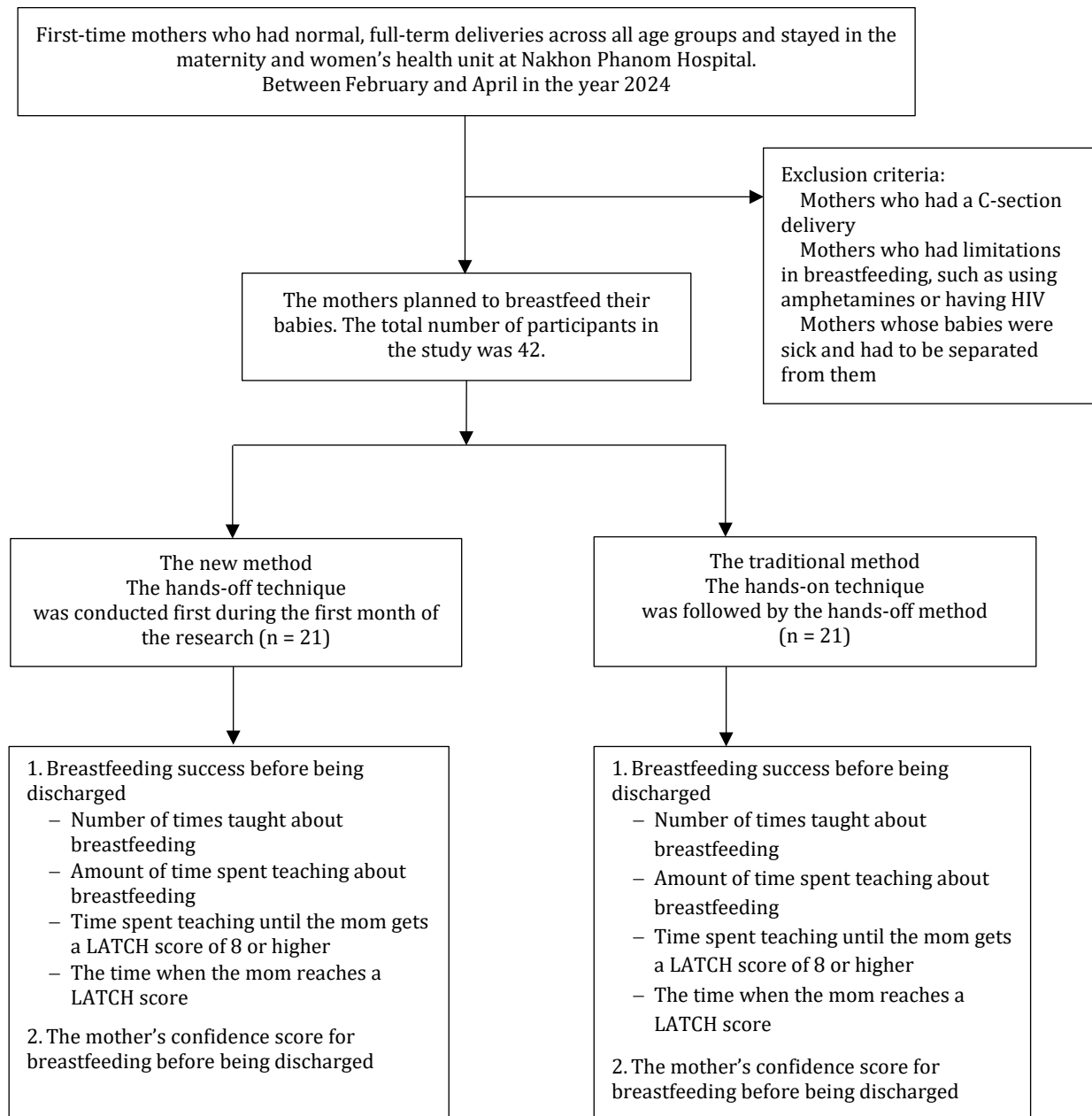


Figure 1. Flow of patients within the study

2.3 Data collection

The researchers sought consent from mothers who met the study criteria. They explained the study's objectives, potential benefits, procedures, and duration, and clarified that participation was voluntary. Mothers who agreed to participate provided written consent by signing a consent form. The researchers interviewed the mothers in the sample using the form about general information on the mother and baby. Then the researchers recorded more data from the medical records of the mother and baby. The mother filled out the questionnaire about how confident she felt breastfeeding. The sample got breastfeeding teaching. The control group was taught using the normal hands-on technique used in the obstetrics ward. The experimental group was taught using the hands-off technique, which focused on demonstrating without touching the mother and baby. The LATCH score was checked, and they recorded how many training sessions there were and how long each one took until the mother could do it right on her own. On the day of discharge from the hospital, the mother completed the breastfeeding confidence questionnaire.

2.4 Data analysis

The data were analyzed using the frequency, percentage, mean, and standard deviation (S.D.). The data were compared to the differences in how teaching with a hands-off technique affected breastfeeding success before leaving the hospital from first-time mothers of all ages who stayed in the Obstetrics and Gynecology Ward, Nakhon Phanom Hospital. The data were analyzed using an independent t-test, multivariable mean difference regression, and a two-sample Wilcoxon rank-sum test. The data were compared for the breastfeeding confidence of mothers taught with the hands-off technique versus the hands-on technique using the independent t-test, multivariable mean difference regression, and survival regression.

2.5 Ethical considerations

This research was approved by the Nakhon Phanom Hospital Human Research Ethics Committee (NP-EC 11-No.9/2024). The researchers protected the rights of the people in the study by explaining the research objectives, procedures, and their right to agree or refuse to participate at any time during the study.

3. RESULTS AND DISCUSSION

3.1 Results

The effects of teaching with the hands-off technique on breastfeeding success before leaving the hospital were studied in 42 first-time mothers of all ages. They all had full-term births and stayed in the Obstetrics and Gynecology Ward, Nakhon Phanom Hospital, between February and April 2024. They were divided into two groups: the hands-off technique group (experimental group) and the hands-on technique group (control group). Most mothers in both groups were aged 20–34 years, had pregnancies lasting more than 37 weeks, and delivered babies weighing over 3,000 grams. The baby's gender, the mother's education level, job, monthly income, planned maternity leave, first LATCH score, and healthcare benefits were similar between the groups. The differences between the groups included Apgar scores at 1 and 5 minutes and the planned duration of breastfeeding, as shown in Table 1.

When comparing breastfeeding success prior to hospital discharge, the hands-off technique group demonstrated superior outcomes relative to the hands-on technique group. Specifically, the hands-off group required fewer teaching sessions and less time for the baby to achieve proper latching. Additionally, mothers in the hands-off group attained a LATCH score of 8 or higher more quickly and exhibited higher confidence scores before discharge, as detailed in Table 2.

The comparison of results between the hands-off and hands-on techniques was adjusted for differences in study characteristics, including APGAR scores at 1 minute, APGAR scores at 5 minutes, and intention to breastfeed. The results indicated that the hands-off technique group achieved a LATCH score of 8 in an average of 31 hours, whereas the hands-on technique group required 77.69 hours. This demonstrated a reduction in time (time ratio) to 0.63 times that of the hands-on technique, as shown in Figure 2.

3.2 Discussion

The hands-off technique is an effective approach to breastfeeding education, characterized by minimal physical contact between the nurse and both the mother and infant, intervening only when necessary. This method emphasizes demonstrating the correct procedures and allowing the mother to practice positioning the baby and achieving a proper latch independently. By avoiding direct contact with the mother's breasts, the technique helps to reduce potential feelings of embarrassment or discomfort, thereby fostering a more comfortable and confident learning environment for the mother. This approach allows the mother to concentrate fully on the nurse's demonstrations. Repeated practice enables the mother to clearly identify correct and incorrect techniques, facilitating self-directed learning of effective breastfeeding practices. Additionally, this method upholds the mother's autonomy and illustrates the ethical role of nursing in supporting maternal rights (Harnyut & Wongsaree, 2018; Topothai & Tangcharoensathien, 2021) and ensuring successful breastfeeding prior to hospital discharge (Baghany et al., 2013; Charoensurasathon et al., 2019). The results indicated that the hands-off technique required fewer teaching sessions and less time for mothers to achieve a LATCH score of 8 or higher compared to the hands-on technique. Consequently, the hands-off technique is an efficient method for instructing new mothers in breastfeeding before their discharge from the Obstetrics and Gynecology Ward at Nakhon Phanom Hospital.

Mothers who were instructed in breastfeeding using the hands-off technique exhibited higher confidence levels before hospital discharge compared to those taught with the traditional hands-on method. This can be explained by self-efficacy and social cognitive theory, which posits that specifically, strength self-efficacy refers to an individual's confidence in performing a particular behavior. This increased confidence can be attributed to the hands-off technique's emphasis on allowing mothers to independently identify and correct their techniques. By learning the correct procedures autonomously, mothers feel more self-confident and better prepared for breastfeeding upon leaving the hospital. This approach is essential for supporting successful breastfeeding practices and achieving breastfeeding goals. Additionally, it aligns with the rights of mothers to effectively fulfill their parental roles and ensures that infants receive optimal nutrition for healthy growth and development (World Health Organization, 2023).

Table 1. Characteristics of the mothers and child

Characteristics of the mothers and child	Hands-off technique (n = 21)		Hands-on technique (n = 21)		p-value
	n (%)	Mean±SD	n (%)	Mean±SD	
Mother's age (year), mean±SD		24.5±6.48		22.67±4.7	0.435†
Below 20	6 (28.6)		5 (23.8)		
20–34	13 (61.9)		16 (76.2)		
Above 35	2 (9.5)		0 (0)		
Gestation (week), mean±SD		38.1±1.1		38.0±1.0	0.783†
Above 37	20 (95.2)		19 (90.5)		
Below 37	1 (4.8)		2 (9.5)		
Birth weight (gram), mean±SD		3064.3±317.6		3095.2±297.4	0.746†
Below 3,000	10 (47.6)		8 (38.1)		
Above 3,000	11 (52.4)		13 (61.9)		
APGAR Score					
at 1-minute APGAR score,		8.56±0.5		9±0.5	0.012†
at 5-minute APGAR score,		10±0		9.8±0.4	0.036†
Baby's gender					
Female	8 (38.1)		9 (42.9)		1.000*
Male	13 (61.9)		12 (57.1)		
Educational level					
Elementary level or below	2 (9.5)		0 (0)		0.608*
Secondary level	15 (71.4)		17 (80.9)		
Above secondary level	4 (19.1)		4 (19.1)		
Occupation					
Agriculture	0 (0)		1 (4.8)		0.128*
General employee	5 (23.8)		10 (47.6)		
Student	1 (4.8)		2 (9.5)		
Housewife	15 (71.4)		8 (38.1)		
Income					
Below 5,000	0 (0)		1 (4.8)		0.324*
>5,000–10,000	10 (47.6)		7 (33.3)		
>10,000–30,000	10 (47.6)		9 (42.9)		
>30,000	1 (4.8)		4 (19.0)		
Planned maternity leave					
0–3 months	4 (19.1)		9 (42.9)		0.181*
More than 3 months	17 (80.9)		12 (57.1)		
Planned duration of breastfeeding					
0–3 months	0 (0)		3 (14.3)		0.041*
More than 3 to 6 months	2 (9.5)		6 (28.6)		
More than 6 months	19 (90.5)		12 (57.1)		
1st LATCH score		5.4 ±1.2		4.8 ±1.1	0.093†
Healthcare scheme					
Universal coverage scheme	17 (80.9)		11 (52.4)		0.100*
Social security scheme	4 (19.1)		10 (47.6)		

Note: * Two-sample Wilcoxon rank-sum test, †t-test

Table 2. Results of teaching with hands-off and hands-on techniques

Results	Hands-off (n = 21)		Hands-on (n = 21)		p-value
	Mean	(±SD)	Mean	(±SD)	
Number of times taught about breastfeeding	2.7	(±0.6)	3.9	(±1.0)	< 0.001*
– Amount of time spent teaching about breastfeeding (hours)	32.8	(±7.2)	52.0	(±15.4)	< 0.001*
– Time spent teaching until the mom gets a LATCH score of 8 or higher (hours)	29.5	(±7.1)	37.0	(±7.1)	0.002*
– The time when the mom reaches a LATCH score	16.4	(± 1.9)	14.7	(±2.4)	0.012*

Note: *Multivariable mean difference regression

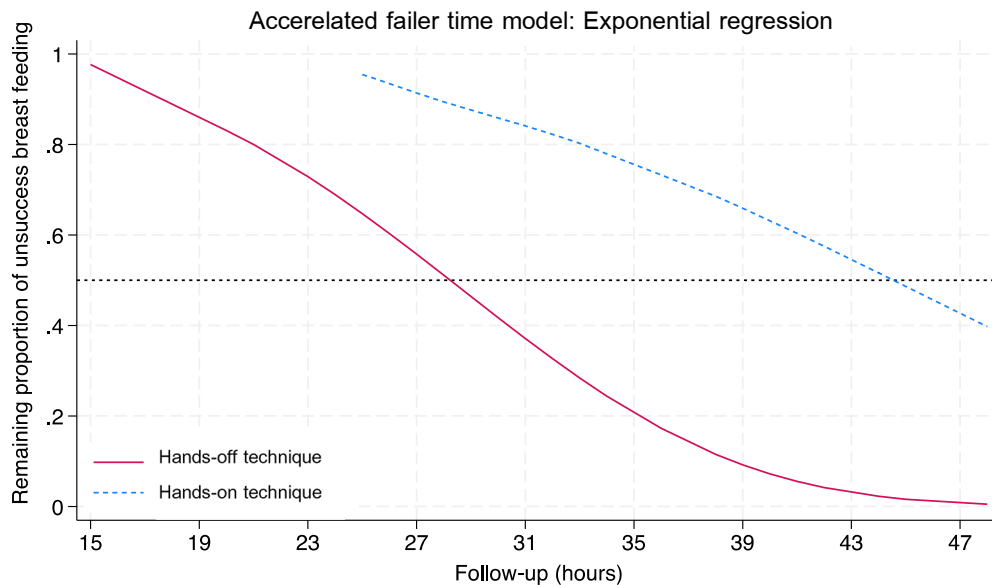


Figure 2. Results of teaching with hands-off and hands-on techniques and the duration to achieve a LATCH score of 8

The generalization of the findings of this study is limited because the results might vary if a more diverse sample of mothers had been selected. Additionally, data collection relied on self-reports, which may have introduced response bias, as members of the research team reviewed the questionnaires, potentially causing the mothers to feel pressured to respond in a certain way according to the researchers' expectations.

4. CONCLUSION

This study demonstrated the effectiveness of the hands-off teaching technique in enhancing breastfeeding efficiency and maternal confidence. The hands-off approach, which aligns with nursing ethics by advocating for postpartum mothers, not only promoted the decision to breastfeed but also built confidence in successful breastfeeding. The findings indicated that mothers in the hands-off group required fewer teaching sessions and less time to achieve successful breastfeeding and higher LATCH scores compared to those in the hands-on group. Additionally, the hands-off technique significantly improved maternal confidence before discharge. These results suggested that adopting the hands-off method could be beneficial in supporting breastfeeding mothers, potentially leading to better breastfeeding outcomes and increased maternal satisfaction.

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