

**RELATIONSHIP BETWEEN POSTNATAL MOTHERS' KNOWLEDGE ABOUT WOOLWICH MASSAGE AND BABY WEIGHT GAIN AT THE ALISAH CLINIC IN 2025**

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**ABSTRACT**

*Woolwich massage is a stimulation for breastfeeding mothers that provides a sense of relaxation and comfort, thereby increasing prolactin hormones and breast milk production, which is the main source of nutrition for babies. Exclusive breastfeeding for the first six months, followed by complementary foods until the age of two, plays an important role in the growth of babies, including weight gain. This study aims to determine the relationship between postpartum mothers' knowledge of Woolwich massage and infant weight gain at the Alisah Clinic in 2025. The study design uses an analytical approach with total sampling techniques, involving the entire population of 30 postpartum mothers who underwent Woolwich massage. The results show that the majority of mothers had poor knowledge (14 people, 46.7%), while a minority had good knowledge. The majority of infants did not experience weight gain, namely 23 infants (76.7%), while 7 infants (23.3%) experienced weight gain. Statistical testing at a 95% confidence level yielded a p-value of  $0.00 < 0.01$ , indicating a significant relationship between postpartum mothers' knowledge of Woolwich massage and infant weight gain. The conclusion of this study confirms that postpartum mothers' knowledge influences the success of Woolwich massage in supporting infant growth. It is recommended that postpartum mothers routinely perform Woolwich massage to increase breast milk production, thereby stimulating growth and becoming an important factor in infant weight gain.*

*Keywords: Knowledge; Postnatal-Care; Woolwich-Massage; Baby-Weight.*

## INTRODUCTION

Breastfeeding is a beautiful moment with enormous benefits. This is proven by the increasing number of studies that state that breast milk has many advantages that cannot be replaced by any other milk. In the interest of reducing child morbidity and mortality rates, the United Nations Children's Fund (UNICEF) and the World Health Organisation (WHO) recommend that infants be exclusively breastfed for at least six months, (Malatuzzulfa, et al 2022). The consequences of not receiving exclusive breastfeeding include increased susceptibility to infections, higher risk of non-infectious diseases, digestive health issues, and suboptimal brain development. This is because breast milk contains unsaturated fatty acids, and meeting this need facilitates optimal brain development in infants. Additionally, children who do not receive exclusive breastfeeding are also at risk of stunting, (Rizka, et al 2024).

Woolwich massage is a stimulation given to breastfeeding mothers that can induce relaxation and comfort, thereby increasing prolactin and oxytocin hormones and the release of oxytocin. This massage stimulates nerve cells in the breasts, which then send signals to the hypothalamus. The anterior pituitary gland responds by releasing prolactin, which is carried by the blood to the myoepithelial cells in the breasts. These cells produce breast milk and prevent breast inflammation or mastitis. Woolwich massage is performed on postpartum mothers twice a day, in the morning and evening, for approximately 15 minutes, and must be done for a minimum of 3 days, (Ritonga, 2024).

The World Health Organisation (WHO) recommended in 2021 that all infants should be exclusively breastfed until six months of age, as breast milk is the gold standard for infant nutrition. Research shows that only 41% of all infants worldwide are exclusively breastfed, and the WHO is targeting an increase in exclusive breastfeeding to at least 50% by 2025, (Sagala, et al, 2024).

South Asia has the highest prevalence of exclusive breastfeeding at 60%. In contrast, only 26% of infants are exclusively breastfed in North America (UNICEF, 2021). UNICEF data (2021) shows that in 2020, the percentage of exclusive breastfeeding in infants aged 0-6 months in Southeast Asia was 57%. From this data, it was found that the highest rate of exclusive breastfeeding was in Cambodia with a percentage of 60%-79% and the lowest was in Thailand with a percentage of <20%, (Aprianty, 2023).

According to the Indonesian Ministry of Health (2020), the coverage of complete postnatal visits (KF) in Indonesia in 2020 was 88.3%. The percentage of KF achievement in Central Java Province was 95.6%. The percentage of exclusive breastfeeding coverage in Indonesia in 2020 was 66.06%. The percentage of exclusive breastfeeding coverage in Central Java was 81.4% (Ministry of Health of the Republic of Indonesia, 2021). The percentage of postpartum mothers in Karanganyar in 2020 was 12,086 (99.5%). The percentage of exclusive breastfeeding coverage in 2020 was recorded at 7,146 babies (69%) out of 10,359 babies aged 0-6 months, (Aprianty, 2023).

North Sumatra Province itself has seen a significant decline in the percentage of children who are exclusively breastfed from 2010 to 2021. The coverage of exclusive breastfeeding in 2010 was 55.1%, increasing to 56.6% in 2011 and then decreasing again to 32.2% in 2012. In 2013, it increased to 41.3%, then decreased again to 37.6% in 2014, while in 2021 it decreased compared to 2020, which was around 62,777 (33%) of 189,985 people, (Sirait, 2022).

The Woolwich massage method is a massage method that affects the vegetative nerves and subcutaneous tissue, thereby relaxing the tissue and smoothing blood flow in the duct system. Cell debris in the duct system is removed so that it does not cause blockages in the flow of breast milk through the lactiferous ducts, allowing the flow of breast milk to become smoother. Woolwich massage can stimulate the myoepithelial cells around the mammary glands. The stimulation is transmitted to the hypothalamus and triggers the anterior pituitary gland to produce the hormone prolactin. The prolactin hormone is carried by the blood to the myoepithelial cells of the breast to produce breast milk. Blockages or inflammation in the breast can also be prevented by giving woolwich massage to postpartum mothers, (Ritonga, 2024).

Interventions that can be performed to assist colostrum discharge and facilitate breast milk production in postpartum mothers include Woolwich massage. Woolwich massage is a massage performed on the lactiferous sinus area, specifically 1-1.5 cm above the areola, with the aim of extracting breast milk from the lactiferous sinus. Woolwich massage stimulates nerve cells in the breast. This stimulation is transmitted to the hypothalamus and responded to by the anterior pituitary gland to release prolactin, which is then carried by the blood to the myoepithelial cells of the breast to produce breast milk. This stimulation is then transmitted to the hypothalamus via the spinal cord, causing the hypothalamus to suppress the release of factors that inhibit prolactin

secretion and, conversely, stimulate the release of factors that promote prolactin secretion. This subsequently triggers the anterior pituitary gland to release prolactin, which then stimulates the alveolar cells responsible for producing breast milk, (Yulianti, 2023).

Efforts made to stimulate prolactin and oxytocin hormones in mothers after giving birth include providing a relaxing sensation to the mother by performing a woolwich massage. The woolwich massage is performed on the lactiferous sinus area, precisely 1-1.5 cm above the areola mammae, with the aim of expressing breast milk from the lactiferous sinus. Massage stimulates nerve cells in the breast, and this stimulation is transmitted to the hypothalamus and responded to by the anterior pituitary gland to release prolactin, which is then carried by the blood to the myoepithelial cells of the breast to produce breast milk, increase breast milk volume, and prevent breast milk blockage that can cause breast swelling, (Batubara et al, 2024).

Woolwich massage has several benefits, including: preventing inflammation or breast engorgement, preventing blockages, and increasing breast milk production. Woolwich massage is administered to postpartum mothers in the morning and evening, twice daily, for a minimum of three days. The procedure involves circular massage on the lactiferous sinus area, specifically 1–1.5 cm outside the areola, using both thumbs for 15 minutes, (Kusumastuti et al, 2019). Oxytocin massage is a massage along the spine (vertebrae) up to the fifth to sixth ribs to stimulate the hormones prolactin and oxytocin after childbirth, (Ruspita, R., & Lisviarose, 2019).

According to the 2021 Indonesian Health Profile, the percentage of exclusive breastfeeding for infants aged 0-5 months was 71.58% in 2021. This figure shows an improvement from the previous year's rate of 69.62%. However, most provinces still have exclusive breastfeeding rates below the national average (Ministry of Health, 2021). North Sumatra Province itself has seen a significant decline in the percentage of children who are exclusively breastfed from 2010 to 2021, (Sinaga, R., & Sembiring, 2023).

Research conducted by Wahyuni, E. S., et al., (2021) entitled *The Effect of Woolwich Massage on Breast Milk Production in Postpartum Mothers at the Sri Wahyuni Clinic*. The results of the study concluded that the average breast milk production before Woolwich massage was (26.91) with a standard deviation of (7.905) and the average after Woolwich massage was (83.93) with a standard deviation of (7.713). From this conclusion, it can be interpreted that there was an increase in breast milk production after Woolwich massage was given, (Nofita, 2025)

Another study was conducted by Nurfija and Murni (2020) entitled *Differences Between the Combination of Woolwich Massage and Rolling Massage with the Marmet Technique on Breast Milk Production in Postpartum Mothers in the Karang Pule Community Health Centre Working Area*. The study concluded that the combination of Woolwich massage was more effective than the Marmet technique, with an average breast milk production of 29.12 cc for the Woolwich massage combination, while the average breast milk production for the Marmet technique was 22.35 cc, with a p-value of 0.013. Therefore, it can be concluded that the Woolwich massage technique is more effective, (Nurfija, 2020)

Based on an initial survey conducted by researchers at the Alisah Clinic, interviews were conducted with 10 postpartum mothers, and data was obtained showing that 8 postpartum mothers were unaware of Woolwich massage, while 5 postpartum mothers knew how to perform Woolwich massage. Therefore, the author is interested in further researching the 'Relationship between Postpartum Mothers' Knowledge of Woolwich Massage and Infant Weight Gain at Alisah Clinic in 2025'.

## **RESEARCH METHODS**

The research method used was an analytical survey with a cross-sectional design, whereby data on independent variables (postpartum mothers' knowledge of Woolwich massage) and dependent variables (increase in infant weight) were collected simultaneously. This design was chosen to analyse the correlation between risk factors and effects occurring in a single observation. With this approach, researchers can assess the relationship between postpartum mothers' knowledge of Woolwich massage and infant weight gain at the Alisah Clinic in 2025.

The study was conducted at the Alisah Clinic from May to July 2025. The population in this study was all postpartum mothers at the clinic, numbering 30 people. Sampling was carried out using total sampling technique, where the entire population was used as the research sample. Thus, the number of samples used was 30 postpartum mothers who performed Woolwich massage.

The research conceptual framework describes the relationship between the independent variable (postpartum mothers' knowledge of Woolwich massage) and the dependent variable (increase in infant weight). Operational definitions were established to clarify the measurements. Knowledge was measured using a questionnaire with 10 true-false statements, categorised as good, adequate, and poor. Meanwhile, infant weight gain was measured using a questionnaire with 10 statements, categorised as increase and no increase.

Data collection included primary data (respondent interviews and questionnaires), secondary data (medical records and patient visit data), and tertiary data (literature, health reports, and publications). The data were analysed through the stages of collecting, checking, coding, entering, and processing using the SPSS 17 program. Univariate analysis was used to describe the data distribution, while bivariate analysis was performed using the Chi-square test to determine the significant relationship between postpartum mothers' knowledge of Woolwich massage and infant weight gain.

## RESULTS AND DISCUSSION

### Univariate Analysis

Univariate analysis aims to determine the frequency distribution of respondents' answers to variables based on research issues expressed in the form of frequency distributions. The results are as follows:

#### Univariate analysis of postpartum mothers' knowledge of Woolwich massage

**Table 1. Frequency Distribution Based on Postpartum Mothers' Knowledge of Woolwich Massage at Alisah Clinic in 2025.**

No	Pengetahuan	Jumlah	
		F	%
1	Baik	3	10,0
2	Cukup	13	43,3
3	Kurang	14	46,7
<b>Total</b>		<b>30</b>	<b>100</b>

Source: Primary Data 2025

Based on Table 1, it can be seen that of the 30 postpartum mothers surveyed, 3 (10.0%) had good knowledge, 13 (43.3%) had adequate knowledge, and 14 (46.7%) had poor knowledge.

### Univariate Analysis with Infant Weight Gain

**Table 2. Frequency Distribution Based on Infant Weight Gain at TPMB in 2025.**

No	Peningkatan Berat Badan Bayi	Jumlah	
		F	%
1	Tidak Meningkatkan	23	76,7
2	Meningkat	7	23,3
<b>Total</b>		<b>30</b>	<b>100</b>

Source: Primary Data 2025

Based on Table 2, it can be seen that of the 30 respondents who knew about infant weight gain, 23 (76.7%) did not know, and 7 (23.3%) knew about infant weight gain.

### Bivariate Analysis

Bivariate analysis aims to determine whether there is a relationship between the independent variable and the dependent variable. The results are as follows:

**Table 3. Relationship between Postpartum Mothers' Knowledge of Woolwich Massage and Infant Weight Gain at the Alisah Clinic in 2025.**

Pengetahuan	Peningkatan Berat Badan Bayi				Total		P-Value
	Meningkat		Tidak Meningkatkan		F	%	
	F	%	F	%			
Baik	3	10,0	0	0,0	3	10,0	P=0,01
Cukup	8	26,7	5	16,7	13	43,3	
Kurang	0	0,0	14	46,7	14	46,7	
<b>Total</b>	<b>11</b>	<b>36,7</b>	<b>19</b>	<b>46,6</b>	<b>30</b>	<b>100</b>	

Source: Primary Data 2025

From Table 3, it is known that of the 30 respondents, 3 mothers (10.0%) had good knowledge, of which 3 (10.0%) had improved good knowledge, and 0 (0.0%) had good knowledge that did not

improve. Thirteen mothers (43.3%) had sufficient knowledge, of which 8 (26.7%) had increased sufficient knowledge, and 5 (16.7%) had sufficient knowledge that did not increase. Fourteen mothers (46.7%) had insufficient knowledge, of which 10 (33.3%) had increased insufficient knowledge, and 4 (13.3%) had insufficient knowledge that did not increase. (26.7%) had adequate knowledge that had improved, and 5 (16.7%) had adequate knowledge that had not improved. Fourteen (46.7%) had poor knowledge, of which 0 (0.0%) had poor knowledge that had improved and 14 (46.7%) had poor knowledge that had not improved. After conducting a chi-square test, the results showed that there was a significant relationship between postpartum mothers' knowledge of Woolwich massage and increased infant weight with a p-value (sig) of  $0.000 < \alpha 0.00$ .

## Discussion

The results of this study show that the majority of postpartum mothers have insufficient knowledge about Woolwich massage (46.7%), while only a small proportion have good knowledge (10%). This condition has an impact on infant growth, with the majority of infants not experiencing weight gain (76.7%). The knowledge of postpartum mothers greatly influences breastfeeding practices, as Woolwich massage has been proven to increase relaxation and stimulate prolactin hormones, which play an important role in breast milk production. This is in line with the research by Wahyuni et al. (2021), which found a significant increase in breast milk production in postpartum mothers after receiving Woolwich massage.

Bivariate analysis showed a significant relationship between postpartum mothers' knowledge of Woolwich massage and increased infant weight ( $p = 0.000 < 0.01$ ). Mothers with adequate to good knowledge experienced greater weight gain in their infants compared to mothers with low knowledge. These findings are in line with the study by Nurfija and Murni (2020), which stated that Woolwich massage is more effective than the Marmet technique in increasing breast milk production. In addition, research by Riska et al. (2024) also proved that regular Woolwich massage can facilitate breast milk production and have a positive impact on the nutritional status of infants.

Thus, this study emphasises that health education on Woolwich massage should be part of postnatal care. Healthcare workers play a crucial role in providing knowledge and practical skills so that mothers can apply this massage consistently. This is in line with the WHO (2021) recommendation, which emphasises the importance of non-pharmacological measures, including breast massage, to support the success of exclusive breastfeeding. Efforts to improve knowledge and practice of Woolwich massage can help improve infant nutritional status, reduce the risk of stunting, and support the global target of increasing exclusive breastfeeding to 50% by 2025.

## CONCLUSIONS

Based on the results of research on the Relationship between Postpartum Mothers' Knowledge of Woolwich Massage and Weight Gain in Infants at the Alisah Maternity Clinic in 2025, it can be concluded that most postpartum mothers have insufficient knowledge (46.7%) and only a few have good knowledge (10%), while the majority of infants do not experience weight gain (76.7%). Statistical test results show that there is a significant relationship between postpartum mothers' knowledge of Woolwich massage and infant weight gain ( $p = 0.000 < \alpha = 0.05$ ), so that the better the mother's knowledge, the greater the likelihood of the infant experiencing weight gain. Therefore, it is recommended that educational institutions use this study as a reference for learning, that future researchers develop studies with a broader scope, that respondents (postpartum mothers) increase their knowledge and routinely perform Woolwich massage, and that health workers be more active in providing counselling and motivation regarding the importance of Woolwich massage in supporting the success of exclusive breastfeeding and infant growth.

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