



EFFECTIVENESS OF BREAST CARE EDUCATION WITH BROCHURE MEDIA TO INCREASE KNOWLEDGE ABOUT BREAST DAMS IN POST PARTUM MOTHERS AT DAMAIYANTI CLINIC, SUB-DISTRICT MEDAN DENAI NORTH SUMATRA PROVINCE IN 2024

Lusi Aulia Sari¹, Imran Saputra Surbakti², Lisa Putri Utami Damanik³, Magdalena Barus⁴, Silawati⁵, Adelia⁶, Surya Ningtyas⁷

^{1,2,3,4,5,6,7}STIKes Mitra Husada Medan

Email: 2219201063@mitrahusada.ac.id, imransaputrasurbakti@mitrahusada.ac.id,
lisaputriutamidamanik@mitrahusada.ac.id, magdalenabarus@mitrahusada.ac.id,
2319201523@mitrahusada.ac.id, 2219201001@mitrahusada.ac.id, 2319201070@mitrahusada.ac.id

ABSTRACT

Breast engorgement is a common breastfeeding disorder experienced by postpartum mothers and poses a significant risk of serious complications, such as mastitis and breast abscesses, if not treated promptly. The objective of this study is to evaluate the effectiveness of breast care education using brochure media in improving the knowledge of postpartum mothers regarding breast engorgement. This research employs a quantitative approach with a quasi-experimental design involving an intervention group and a control group, utilizing pre-test and post-test methods. A sample of 30 postpartum mothers was selected through a total sampling technique, with 15 participants assigned to each group. Data collection instruments consisted of questionnaires distributed before and after the educational intervention, followed by analysis using the Paired Sample T-Test. The results revealed that prior to the intervention, the majority of respondents (80%) possessed a low level of knowledge. However, following the educational intervention via brochures, knowledge levels increased, with 27% of respondents achieving a "good" level, 37% "adequate," and 37% remaining in the "poor" category. Statistical analysis demonstrated significant results ($p = 0.000 < 0.05$), indicating a substantial difference in knowledge levels before and after the intervention. In conclusion, breast care education delivered through brochure media is proven to be effective in enhancing postpartum mothers' understanding of breast engorgement. These findings are expected to serve as reference material for health counseling to support the success of exclusive breastfeeding.

Keywords: *Breast Engorgement, Postpartum Mothers, Breast Care, Health Education, Brochures*

Introduction

Nursing provides substantial health advantages for both the maternal parent and the neonate. For the initial six months of life, breast milk acts as a comprehensive nutritional source that meets all physiological requirements of the infant. Beyond offering protection against gastrointestinal infections and prevalent childhood ailments like pneumonia, breastfeeding is linked to long-term preventative benefits, including a reduced

likelihood of developing obesity during childhood and adolescence. The concept of exclusive breastfeeding dictates that the infant consumes only breast milk, with no supplementary liquids or solids permitted—including water. The sole exceptions to this rule are the administration of oral rehydration salts, essential vitamins, minerals, or prescribed medications in the form of drops or syrups. (*Global breastfeeding scorecard 2023 | UNICEF*, no date).



A prevalent complication during the puerperium period is mammary engorgement. This clinical condition is identified by edema, induration, and significant discomfort in the breast tissue, primarily resulting from an accumulation of milk and lymphatic fluid. Failure to manage this condition effectively may lead to the progression of mastitis—an inflammatory infection of the breast—which frequently serves as a primary factor for the untimely cessation of breastfeeding among mothers (Kementerian Kesehatan RI, 2021).

The primary etiology of mammary engorgement is often attributed to a deficit in maternal literacy regarding appropriate breast care and lactation management. Many primiparous mothers remain unaware that consistent breast maintenance is essential to optimize vascular circulation and promote efficient galactopoiesis (milk production). Without regular stimulation and proper techniques, the risk of milk stasis increases significantly (Suliasih, R. A.; Puspitasari, D.; Pawestri, 2019).

To expedite the learning process, health promotion initiatives necessitate the use of strategic communication tools. Brochures serve as a highly efficient visual instrument due to their succinct nature, aesthetic appeal, and portability, allowing mothers to review the information independently. Within the context of the Damaiyanti Clinic, the implementation of brochure-based education is anticipated to bolster maternal self-efficacy, empowering women to perform autonomous breast care routines effectively (S. Notoatmodjo, 2018).

Preliminary clinical observations conducted at the Damaiyanti Clinic, located in the Medan Denai District, reveal that a significant number of women in the early puerperium phase continue to report symptoms of mammary edema and

localized pain. These findings suggest a critical gap in current postpartum support and highlight the imperative for more systematic and structured educational interventions to mitigate the incidence of breast engorgement (Setiawan, 2021). In light of these challenges, the researchers were motivated to evaluate the 'Efficacy of Brochure-Based Breast Care Education in Enhancing Literacy Regarding Breast Engorgement Among Postpartum Mothers at the Damaiyanti Clinic.' This study seeks to address the prevailing knowledge gaps and provide a practical, evidence-based solution to improve maternal health outcomes in the local community.

Research Method

A quantitative methodology utilizing a quasi-experimental framework was adopted for this research. Specifically, the study employed a non-equivalent control group design, involving a comparison between an intervention cohort and a control cohort. Both groups were subjected to baseline assessments (pre-test) to establish initial knowledge levels. Subsequently, the intervention group received educational sessions via brochure media, while the control group did not. The study concluded with a follow-up assessment (post-test) to evaluate the relative efficacy of the brochure-based education in enhancing participant outcomes (Setiawan, 2021).

The research was situated at the Damaiyanti Clinic, located within the Medan Denai District of North Sumatra Province. The investigation spanned a five-month period, conducted from January through May 2024. The target population encompassed the entire cohort of postpartum mothers receiving care at the facility. To select participants, a purposive sampling strategy was implemented, guided by specific inclusion

criteria: respondents were required to be in the postpartum phase, provide informed consent for participation, and possess the literacy skills necessary to comprehend the educational brochures (Sugiyono, 2019).

A structured questionnaire focusing on breast engorgement was employed as the primary instrument to quantify knowledge levels. For the experimental group, the intervention involved the dissemination of educational brochures detailing preventative measures and clinical management of mammary engorgement. The data collection followed a systematic three-phase procedure:

1. Baseline Assessment (Pre-test): Quantifying the initial knowledge base of participants across both cohorts.
2. Implementation (Intervention): The treatment group received targeted education via brochures, whereas the control group was provided with conventional clinical guidance.
3. Evaluation (Post-test): Re-assessing knowledge levels following the completion of the intervention phase.

Inferential statistical analysis was subsequently performed to evaluate the

mean score differences between the pre-test and post-test. Depending on the normality of the data distribution, either a Paired Sample T-Test or a non-parametric Wilcoxon Signed-Rank Test was utilized to determine the intervention's impact (Soekidjo Notoatmodjo, 2018).

Result

This investigation delineates the demographic profiles of the participants alongside the primary outcomes concerning the efficacy of brochure-based breast care education. The study specifically evaluates the enhancement of maternal literacy regarding mammary engorgement at the Damaiyanti Clinic, Medan Denai District, North Sumatra, during the 2024 period. Methodologically, a quasi-experimental framework was implemented, utilizing a pre-test and post-test design across two distinct cohorts. Both the intervention and control groups comprised 15 respondents each, facilitating a comparative analysis of the educational medium's impact

Table 1. The Relationship between Education and the Effectiveness of Breastcare Education with Brochure Media in Increasing Knowledge about Breast Dam in Postpartum Mothers

Knowledge	Eksperimen		Control		Value p
	f	%	f	%	
Good	8	27%	0	0%	
Enough	11	37%	6	20%	0,000
Less	11	37%	24	80%	
Total	30	100%	30	100%	

Univariate analysis reveals that prior to the dissemination of educational brochures, the vast majority of postpartum participants exhibited a deficient understanding of the subject, with 80%

falling into the 'poor' knowledge category. Following the implementation of the educational intervention, a notable shift in knowledge distribution was observed. Post-intervention data indicates that 27%



of the respondents attained a 'good' level of comprehension, while 37% reached an 'adequate' level, and the remaining 37% were still categorized within the 'poor' knowledge bracket.

The bivariate analysis, conducted via the Paired Sample T-Test, yielded a statistically significant outcome with a p-value of 0.000 ($p < 0.05$). This finding demonstrates a substantial disparity between maternal knowledge levels prior to and following the intervention. Consequently, it can be inferred that utilizing brochures as a pedagogical tool for breast care is highly effective in elevating the understanding of breast engorgement among postpartum mothers. The marked improvement in scores confirms that this visual medium serves as a successful instrument for health literacy enhancement.

Regarding educational background, the vast majority of participants (80%) had completed senior high school. Furthermore, nutritional assessments via Mid-Upper Arm Circumference (MUAC/LILA) indicated that 83% of the postpartum mothers maintained a normal nutritional status. These two variables—educational attainment and physical health status—are posited as critical facilitators in the successful acquisition of information. Such favorable baseline characteristics likely enhanced the overall efficacy of the educational intervention, as respondents possessed both the cognitive foundation and the physiological stability necessary for optimal learning.

These findings reinforce the theoretical framework proposed by Notoatmodjo, which asserts that cognitive knowledge serves as a fundamental determinant of individual health behavior. By enhancing understanding, individuals are more likely to adopt proactive health practices. Furthermore, the outcomes of

this investigation align with previous empirical studies conducted by (Imaniyah and A'yun, 2023), which demonstrated that augmenting the knowledge base of postpartum women is instrumental in mitigating the risk of breast engorgement. These findings suggest that higher levels of health literacy directly contribute to the prevention of milk stasis, thereby reducing the incidence of mammary blockages through more effective and proactive self-care practices.

Discussion

Study outcomes at Damaiyanti Clinic demonstrate a statistically significant surge in maternal knowledge following the brochure-based intervention. The substantial disparity between pre-test and post-test metrics confirms that visual-pedagogical tools facilitate superior information retention. This evidence validates brochures as an effective, low-cost clinical strategy to optimize breast engorgement literacy among postpartum patients.

This is in line with (Soekidjo Notoatmodjo, 2018) theory, Consistent with the theory that cognitive acquisition stems from sensory perception of a specific stimulus, knowledge serves as the foundational domain for overt behavioral transformation. Within this framework, a mother's clinical comprehension of breast hygiene and lactation techniques directly correlates with the adoption of preventative practices, effectively reducing the risk of milk stasis.

This study also reinforces the findings of (Yanti, 2017), who asserts a significant correlation between maternal health literacy and the incidence of milk stasis. Specifically, a deficit in clinical knowledge serves as a primary risk factor for mammary engorgement, as it impairs the mother's capacity to execute



autonomous breast care protocols effectively

Furthermore, the educational efficacy of brochures is substantiated by their role as permanent visual cues that enhance cognitive retention. Unlike oral instructions, brochures provide a tangible reference that empowers mothers to master preventative breast care independently, effectively bridging the gap between clinical theory and practical self-management (Tarigan, 2019). This aligns with regional findings in North Sumatra, demonstrating that visual aids outperform verbal-only instruction in knowledge acquisition. The primary advantage of brochures lies in their function as a durable home-based reference, allowing mothers to engage in spaced repetition and real-time troubleshooting when facing breastfeeding challenges outside the clinic

The study confirms a significant association between parity and colostrum extraction. Conversely, age did not demonstrate a correlation with colostrum output in either the oxytocin massage or breast acupressure participants, as evidenced by p-values greater than 0.05 (Pinem *et al.*, 2021).

Oxytocin massage provides comfort to the mother, reduces swelling (engorgement), reduces breast milk obstruction and is an attempt to stimulate the hormones prolactin and oxytocin after childbirth. This study aims to determine the effect of oxytocin massage with the onset of breastfeeding in postpartum stage IV mothers at the Asnah Clinic, Medan Tembung District in 2019. Oxytocin massage is one of the solutions to overcome the smooth production of breast milk by massaging along the spine (vertebrae) to the fifth-sixth rib (Harefa, Damanik and Marliani, 2020).

This is further corroborated by an observational analytic study at the

Baby Spa and Mom Care Clinic (2019), which employed a case-control approach. Utilizing Chi-Square analysis, the study reported a significant correlation ($p = 0.000$) between breast care practices and the incidence of mammary engorgement. These findings validate that systematic breast care management is a critical determinant in preventing milk stasis (Munthe Midwifey *et al.*, 2022).

From a clinical perspective, this cognitive improvement is vital for overcoming the psychological and educational barriers that often impede breastfeeding. By implementing structured education at the Damaiyanti Clinic, the risk of milk stasis can be mitigated, directly supporting the optimization of exclusive breastfeeding in alignment with World Health Organization (WHO) global targets (Organization, 2020).

Conclusion and Suggestion

In summary, brochure-based pedagogy at Damaiyanti Clinic is a highly effective, low-cost intervention for mitigating milk stasis. While baseline data showed a prevalent knowledge deficit among postpartum mothers, post-intervention results confirmed a significant surge in preventative breast care literacy ($p=0.000$). This underscores that structured visual media serves as a practical, high-impact tool for enhancing maternal self-efficacy and supporting exclusive breastfeeding targets.

Clinical facilities should institutionalize breast care pedagogy into routine prenatal and postpartum programs, utilizing brochures as essential instructional reinforcements. For healthcare practitioners, particularly midwives, it is imperative to refine communicative competencies and tailor counseling strategies to the socioeconomic and educational profiles of mothers. This



approach ensures that health information is not only delivered but effectively internalized to prevent mammary engorgement.

Academic institutions should integrate these findings into postpartum midwifery curricula as a primary reference for lactation management. Future research should expand this scope by utilizing larger cohorts, extended longitudinal interventions, and comparative multimedia analyses—incorporating digital and audiovisual platforms—to identify the most robust pedagogical method for optimizing maternal health literacy.

Ultimately, postpartum mothers are encouraged to proactively engage in clinical counseling and health literacy initiatives. By actively seeking professional guidance, mothers can enhance their lactation self-efficacy and readiness, ensuring optimal breastfeeding practices while effectively preventing complications such as mammary engorgement.

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References

Global breastfeeding scorecard 2023 |

UNICEF (no date). Available at: <https://www.unicef.org/documents/global-breastfeeding-scorecard-2023> (Accessed: January 7, 2026).

Harefa, S.K., Damanik, L.P.U. and Marliani (2020) "The Effect Of Oxytocin Massage Using The Onset Of Breastmilk Expenditure In The Postpartum Mothers At Clinic Asnah Medan Tembung District In 2019," *Mitra Husada Health Internasional Conference (MiHHICo)*, 1, pp. 87–91. Available at: <https://prosidingmhm.mitrahusada.ac.id/index.php/mihihico/article/view/37> (Accessed: January 8, 2026).

Imaniyah, I. and A'yun, Q. (2023) "Penyuluhan Pentingnya Perawatan Payudara Pada Ibu Nifas Di Polindes Desa Pakong Kecamatan Pakong Kabupaten Pamekasan," *Community Development Journal: Jurnal Pengabdian Masyarakat*, 4(2), pp. 3441–3444. Available at: <https://doi.org/10.31004/CDJ.V4I2.14968>.

Kementerian Kesehatan RI (2021) *Profil Kesehatan Indonesia Tahun 2020*. Jakarta.

Munthe Midwifery, J. et al. (2022) "The Correlation Between Breast Care With The Incidence Of Breastmilk Dams At Ns Baby Spa And Mom Care Clinic Medan Johor District Medan City In 2019," *INTERNATIONAL JOURNAL OF MIDWIFERY RESEARCH*, 1(3). Available at: <https://doi.org/10.47710/IJMR.V1I3.22>.

Notoatmodjo, Soekidjo (2018) *Metodologi Penelitian Kesehatan*. Jakarta: Rineka Cipta.

Notoatmodjo, S. (2018) *Promosi Kesehatan dan Perilaku Kesehatan*. Jakarta: Rineka Cipta.

Organization, W.H. (2020) *Global*



Breastfeeding Scorecard 2020.

Available at:

<https://www.google.com/search?q=https://www.who.int/publications/item/WHO-NMHP-NFS-20.1>.

Pinem, S.B. *et al.* (2021) "Malaysian Journal of Medicine and Health Sciences (eISSN 2636-9346) Education Study Program of Professional Program Midwife," *Mal J Med Health Sci*, 17(SUPP4), pp. 22–26.

Setiawan, A.S. (2021) *Metodologi Penelitian Kebidanan: DIII, DIV, S1, dan S2*. Edisi Revi. Yogyakarta: Nuha Medika.

Sugiyono (2019) *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta.

Suliasih, R. A.; Puspitasari, D.; Pawestri, D. (2019) "Faktor yang Berhubungan dengan Pemberian ASI Eksklusif," *Jurnal Keperawatan Muhammadiyah*, 4(2).

Tarigan, R. (2019) "Pengaruh Edukasi Perawatan Payudara Terhadap Pengetahuan Ibu Nifas Dalam Pencegahan Bendungan ASI," *Jurnal Ilmiah Kebidanan Imelda*, 5(2), pp. 55–60.

Yanti, D. (2017) "Hubungan Pengetahuan Ibu Nifas Tentang Perawatan Payudara Dengan Kejadian," *Jurnal Ilmiah PANNMED*, 11(3).