

## THE RELATIONSHIP BETWEEN THE NUTRITIONAL STATUS OF POSTPARTUM WOMEN AND THE WOUND HEALING PROCESS POST SECTIO CAESAREA AT TANJUNG PURA HOSPITAL IN 2024

Revalina Manurung<sup>1</sup>, Rosmani Sinaga<sup>2</sup>, Febriana Sari<sup>3</sup>, Dewi Sartika Hutabarat<sup>4</sup>,  
Christina Sirait<sup>5</sup>, Putri Latifah<sup>6</sup>, Ernita Agustina<sup>7</sup>

<sup>1-7</sup>Sekolah Tinggi Ilmu Kesehatan Mitra Husada Medan

E-Mail: [2219201094@mitrahusada.ac.id](mailto:2219201094@mitrahusada.ac.id), [rosmanisinaga@mitrahusada.ac.id](mailto:rosmanisinaga@mitrahusada.ac.id), [febrianasari@mitrahusada.ac.id](mailto:febrianasari@mitrahusada.ac.id),  
[2319201008@mitrahusada.ac.id](mailto:2319201008@mitrahusada.ac.id), [2319201047@mitrahusada.ac.id](mailto:2319201047@mitrahusada.ac.id), [2319201019@mitrahusada.ac.id](mailto:2319201019@mitrahusada.ac.id)

### ABSTRACT

Background: Cesarean delivery is a surgical procedure that carries specific postoperative risks, particularly regarding suboptimal wound recovery. A patient's nutritional health is a critical determinant in this process; insufficient nutrient intake can impede cellular regeneration, suppress immune response, and elevate the likelihood of infection, ultimately extending the recovery period. Objective: This study aimed to evaluate the link between nutritional profiles and surgical wound closure among postpartum patients at Tanjung Pura Langkat Hospital in 2023. Methods: Employing an analytical survey with a cross-sectional design, the research involved 30 subjects selected via purposive sampling. Nutritional status was evaluated using mid-upper arm circumference (MUAC), while the REEDA scale served as the assessment tool for wound healing. Data were analyzed using the chi-square test ( $p < 0.05$ ). Results: The findings indicated that 66.6% of respondents maintained normal nutrition, whereas 33.3% were identified with Chronic Energy Deficiency (CED). Notably, optimal healing was achieved by all participants with healthy nutritional status, while delayed recovery was prevalent among those with CED. Statistical analysis confirmed a significant correlation ( $p = 0.000$ ). Conclusion: There is a definitive relationship between nutritional status and the healing of post-CS wounds. Consequently, ensuring balanced nutrition is essential for accelerating recovery and improving clinical outcomes.

Keywords: Continuity of Care (CoC), Evidence-Based Midwifery, Maternal and Neonatal Health, Service Excellence, Early Detection of Complications.

### Introduction

Cesarean section (CS) is a surgical childbirth procedure carried out based on specific medical indications, including cephalopelvic disproportion, abnormal fetal presentation, and various obstetric complications. (Sulistiyani, 2022) Although this procedure is effective in reducing maternal and neonatal mortality, it is also associated with several postoperative risks, such as infection, hemorrhage, and prolonged wound healing. (Kolantung et al., 2021) The wound healing process following CS is influenced by multiple factors, including personal hygiene,

maternal age, existing health conditions, and the nutritional status of postpartum women.

Optimal nutritional intake, particularly sufficient consumption of proteins, vitamins, and minerals, is essential for supporting tissue repair and regeneration. (Munthe et al., 2024) Inadequate nutrition can impair the healing process, increase the likelihood of wound infection, and extend the duration of postoperative care. The World Health Organization (WHO) reported in 2021 that the incidence of surgical site infections after cesarean delivery remains relatively high, especially in developing countries, and is

closely associated with maternal nutritional status.(RISKESDES, 2021) In Indonesia, cesarean section deliveries accounted for 17.6% of all births in 2021, accompanied by a considerable number of postoperative complications.(Festy, 2020)

The World Health Organization (WHO, 2021) reports that postoperative wound infections following cesarean section remain relatively high, particularly in developing countries, and are strongly influenced by maternal nutritional status. In Indonesia, the proportion of deliveries performed by cesarean section reached 17.6% in 2021, accompanied by a considerable number of post-cesarean complications. Preliminary observations at Tanjung Pura Langkat Hospital indicated a yearly increase in cesarean deliveries, along with a rising number of surgical wounds experiencing delayed healing (Mediana Sembiring, 2019). This research was undertaken to investigate the correlation between maternal nutritional status during the postpartum period and the progression of wound recovery following a cesarean delivery.

## Research Method

This quantitative study utilizes a longitudinal Quasi-Experimental design, which offers enhanced internal validity through a pseudo-experimental framework (Festy et al., 2021). The research follows a Nonequivalent Control Group Design, where the sample is divided into an intervention group and a control group (Miswita & Dewi Sartika, 2024). A total of 24 participants were recruited using a purposive sampling technique, consisting of 12 respondents in each group. Data collection was conducted via observation sheets from February to April 2022 within the Medan Johor Health Centre's working area.(Bakhtiar & Ambarwati, n.d.)

## Result

### Univariate Analysis

The following is the distribution of respondents based on nutritional status and wound healing :

#### a. Nutritional Status

**Table: 4.3. Frequency Distribution of Nutritional Status in Post SC Mothers in the Postpartum Room at Tanjung Pura Langkat Hospital in 2023**

Nutritional Status	Frequency (n)	Percentage (%)	Total
Normal	20	66,6	100%
SEZ	10	33,3	

Based on table 4.3 above, it is known that of the 30 respondents, the majority had normal nutritional status, namely 20 people (66.6%) and 10 of them experienced SEZ (33.3%).

#### b. Wound Healing

**Table 4.5. Frequency Distribution of Wound Healing in PostSC Mothers in the Postpartum Room of Tanjung Pura Langkat Hospital in 2023**

Wound Healing	Frequency (n)	Percentage (%)	Total
Quick	25	83,3	100%
Slow	5	16,6	

Based on table 4.5 above, it is known that of the 30 respondents, the majority of whom healed the wound quickly, namely 25 people (83.3%).

### Bivariate Analysis

To determine the relationship between the study's variables, a bivariate analysis using the Chi-Square Test was performed. Statistical significance was defined at a  $p$ -value of less than 0.05, with a 95% confidence level.

**Table 4.6. Relationship between Nutritional Status in Post SC Mothers in the Postpartum Room at Tanjung Pura Langkat Hospital in 2023**

Early Mobilisation	VariablesNutritional Status				N	P-value
	Normal		SEZ			
	N	%	N	%		
Slow	3	10,7	10	89,3	13	0,000
Quick	0	100	20	0	20	
Total	30	63,2	10	36,8	33	

According to the data in Table 4.6, there is a clear disparity in recovery rates based on maternal health. Among the 30 participants, those suffering from Chronic Energy Deficiency (CED) accounted for the vast majority of delayed recovery cases (89.3%, or 10 individuals). Conversely, a mere 10.7% of those with sluggish wound repair maintained a healthy nutritional profile. Notably, rapid healing was exclusive to the well-nourished group, with all 20 respondents in this category (100%) achieving fast recovery. The Chi-square analysis confirmed these observations; with  $p=0.000$  (where  $p<0.05$ ), the results provide strong evidence to reject the null hypothesis, affirming a substantial link between postpartum nutrition and surgical recovery.

### Discussion

Bivariate analysis was conducted to evaluate the correlation between the research variables. This process utilized the Chi-Square Test, with statistical significance established at a  $p$ -value of less than 0.05 and a 95% confidence interval.

These results align with earlier studies indicating that malnutrition hinders wound recovery by reducing the synthesis of protein and collagen necessary for tissue regeneration. Furthermore, nutritional deficits can impair immune function, elevate the risk of infection, and delay the process of wound epithelialization.

Apart from nutritional status, other factors that influence post-SC wound healing include wound hygiene, early mobilisation, and the mother's medical condition. Mothers with a balanced diet and good mobilisation tend to have a faster healing process. Therefore, education on the importance of optimal nutrition and wound care is needed for post-SC women to accelerate postpartum recovery.(Mayasari et al., 2023)

Thus, health workers are expected to provide education on the importance of fulfilling adequate nutrition during the postpartum period and provide optimal nursing care to reduce the risk of post-SC complications. (Ginting et al., 2020)

### Conclusion And Suggestion

The data suggests that maternal nutrition plays a critical role in post-cesarean recovery. Evidence shows that participants with adequate nutritional standing achieved the most effective wound repair, reaching optimal recovery benchmarks across the board (100%) experiencing faster recovery.(Tarigan et al., 2024) In contrast, the majority of mothers identified with chronic energy deficiency (CED) showed delayed wound healing (89.3%). These results highlight the essential role of adequate nutritional intake in supporting tissue regeneration, enhancing immune response, and promoting overall postoperative recovery (Azizah *et al.*, 2025).

Health care providers are advised to emphasize nutritional education and monitoring during the antenatal and postpartum periods, especially for mothers undergoing

SC.(Ahmad Dahro, 2020) Nutritional screening and intervention should be part of the routine care to reduce post-SC complications. Further research is recommended to explore other contributing factors such as infection control, mobilization practices, and psychosocial support in the wound healing process.

The importance of nutritional fulfillment in postpartum mothers is closely

linked to the support of their family, especially husbands. Research by (Sinaga *et al.*, 2022) emphasizes that increasing the husband's knowledge and attitude through culturally sensitive health education significantly improves their practice in supporting maternal care. Therefore, involving husbands in nutritional education is a strategic step to ensure that mothers receive the necessary dietary intake for optimal wound healing

## References

- Ahmad Dahro. (2020). *Psikologi kebidanan: analisis perilaku wanita untuk kesehatan* (Vol. 2). Salemba Medika .
- Bakhtiar, A., & Ambarwati, W. N. (n.d.). *Penerapan Mobilisasi Dini Pada Pasien Post Sectio Caesarea Untuk Mempercepat Pemulihan dan Kualitas Hidup Ibu Post Partum*.
- Festy, P. (2020). *The Relationship of Nutritional status and perineal*.
- Festy, P., Wulandari, Y., & Syawaliyah, M. (2021). *The Relationship of Nutritional Status and Perineal Wound Healing Among Post-Partum Women*.
- Frilasari, H., Saudah, N., Prameswari, V. E., Azizah, Y. N., & Suhita, B. M. (2020). Nutritional Pattern And Healing Of Perineum Wound On Postpartum Period. *Journal Of Nursing Practice*, 3(2), 172–180. <https://doi.org/10.30994/jnp.v3i2.85>
- Ginting, S., Damanik, L., Sembiring, A., & Mitra Husada Medan, Stik. (2020). *Hubungan Karakteristik Ibu Dengan Kejadian Anemia Pada Ibu Hamil Di Wilayah Kerja Puskesmas Sei Bejangkar Kabupaten Batubara Tahun 2020*.
- Kolantung, P. M., Mayulu, N., Kundre, R., & Studi Ilmu Keperawatan Universitas Sam Ratulangi Manado, P. (2021). *Hubungan Tingkat Pengetahuan Ibu Hamil Tentang Tanda Bahaya Kehamilan Dengan Kepatuhan Melakukan ANC : Systematic Review*. In *Jurnal Keperawatan* (Vol. 9, Issue 2).
- Mayasari, N., Kusuma, O. I., & Dewi, S. (2023). Literature Study: Correlation Nutrition Status With Wound Healing. *Journal of Widya Medika Junior*, 5(2). <https://doi.org/10.33508/jwmj.v5i2.3684>
- Miswita Manao + Dewi Sartika. (2024). *Pelaksanaan Pendampingan Buku KIA*.
- Munthe, J., Sari, F., Putri, M., Kader, P. P., Kejadian, M., Pada, K., Hamil, I., Pmb, D., Sembiring, S., Putri, N. M., Nurmawan, S., Sembiring, I. S., Utami, L. P., & Sembiring, M. (2024). *p-issn : 2808-6996 Pendampingan Peran Kader dalam Mengurangi Kejadian Kek Pada Ibu Hamil di PMB Sarfina Sembiring*. <https://doi.org/10.56013/jak.v4i1.2980>
- RISKEDES. (2021). *Laporan tahunan 2021 RISKEDES*.
- Sulistiyani. (2022). *Nutritional status and Anemia on wound Healing Process in post cesarean*.
- Azizah, N. *et al.* (2025) 'The Effectiveness of Antenatal Class Education on



- Improving Maternal Preparedness in Facing Postpartum Hemorrhage', *Open Access Health Scientific Journal*, 6(2), pp. 270–275. doi: 10.55700/oahsj.v6i2.105.
- Sinaga, S. N. *et al.* (2022) 'The Increase of Knowledge, Attitude, and Practice of Husbands toward the Prenatal Care of their Wives Using the Illustrations Having the Local Cultural Nuance', *Open Access Macedonian Journal of Medical Sciences*, 10(E), pp. 525–530. doi: 10.3889/oamjms.2022.8092.
- Tarigan, E. F., Mahmudiono, T., Puspitasari, N., Paramita, P. P., & Dwijayanti, I. (2024). Determinants of the quality of life of mother with children with disability: A systematic review. In *African Journal of Reproductive Health* (Vol. 28, Issue 10, pp. 332–347). Women's Health and Action Research Centre. <https://doi.org/10.29063/ajrh2024/v28i10s.36>

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STIKes Mitra Husada Medan