

Original Research

Early Mobilization Accelerates Gastrointestinal Function Recovery in Postoperative Cesarean Section Patients

Ratna Indriati^{1*}, Rosalinna², H. Paryono³

^{1,2,3} Midwifery Department, Ministry of Health Polytechnic Surakarta, Indonesia

ABSTRACT

Background: Early mobilization is an important intervention for post-cesarean section patients as it can accelerate flatus time and reduce gas accumulation in the digestive organs. This effort also helps prevent post-operative complications such as gastrointestinal disorders, circulatory disorders, and abdominal distension through increased gastrointestinal muscle tone and stimulation of intestinal peristalsis. The purpose of this study was to determine the effect of early mobilization on normal digestive function in post-cesarean section patients in the Drupadi Room of Bagas Waras Klaten Regional General Hospital.

Methods: This study used a quasi-experimental design with a post-test only with control group. The study was conducted in November 2022 in the Drupadi Room of Bagas Waras Klaten Regional General Hospital. The sample consisted of 40 post-cesarean section mothers selected using purposive sampling. The research instrument was a flatus time observation sheet. Data analysis was performed using an independent t-test to determine the difference in digestive function between the early mobilization group and the control group.

Results: The results showed a significant difference between the early mobilization group and the control group in terms of flatus time (p -value <0.001). The average flatus time in the early mobilization group was 206.40 minutes, while in the control group it was 485.75 minutes.

Conclusion: Early mobilization has a significant effect on accelerating normal digestive function in patients after cesarean section. Midwives can optimize the implementation of early mobilization as part of standard post-cesarean section care to accelerate gastrointestinal function recovery.

ARTICLE HISTORY

Received: March 27, 2023

Accepted: January 15, 2025

KEYWORDS

Early mobilization; flatus time; post-cesarean

CONTACT

Ratna Indriati



ratnaindriati@gmail.com

Midwifery Department, Ministry of Health Polytechnic Surakarta, Indonesia
Jl. Ksatria No.2, Danguran, Klaten Selatan, Klaten 57425

Cite this as: Indriati, R., Rosalinna, & Paryono, H. (2024). Early Mobilization Accelerates Gastrointestinal Function Recovery in Post-Cesarean Section Patients. *Jurnal Kebidanan dan Kesehatan Tradisional*, 9(2), 105-112. <https://doi.org/10.37341/jkkt.v9i2.667>

INTRODUCTION

Early mobilization is light physical activity performed by patients after surgery, ranging from breathing exercises, effective coughing, to gradual walking. Early mobilization has significant benefits in accelerating patient recovery, including accelerating flatus time and reducing gas accumulation in the digestive organs. This

activity also serves to prevent post-operative complications such as gastrointestinal disorders, circulatory disorders, and abdominal distension because it can increase the tone of the abdominal wall muscles and stimulate intestinal peristalsis (Marhamah & Choire, 2021). Thus, early mobilization is an important intervention to accelerate the return of normal digestive system function in postoperative patients, especially after cesarean section.

Early mobilization plays a role in accelerating the return of intestinal peristalsis and normal digestive function. Ilmi's (2019) study found that most post-cesarean section patients who underwent early mobilization were able to pass flatus in less than 24 hours. The results of Purnomo and Mudhofar's (2020) study also showed a significant difference between patients who underwent early mobilization and those who did not, with the group that underwent early mobilization showing faster digestive recovery. Another study by Yanti and Fridalni (2019) reinforced these findings by showing that early mobilization accelerated the passage of flatus in post-sectio caesarea patients. These results demonstrate the effectiveness of early mobilization as a non-pharmacological measure in accelerating digestive function after surgery (Herman et al., 2019).

Cesarean section is one of the obstetric procedures that continues to increase in various countries, including Indonesia. The World Health Organization (2019) reports that the cesarean section rate in developing countries ranges from 5–15% of total deliveries, and in the United Kingdom, it increased from 9% in 2013 to 24.6% in 2019. Based on the 2018 Basic Health Research (Riskesdas), the caesarean section rate in Indonesia reached 9.8% of total births, with Central Java ranking 10th at 10%. This figure shows a significant increase compared to the previous decade, which requires effective post-operative care to prevent complications (Indonesian Ministry of Health, 2018; Sitorus, 2021).

Digestive system disorders often occur after cesarean section due to the effects of anesthesia and surgical trauma to the abdominal area. Anesthesia can decrease the activity of the autonomic nerves that play a role in the contraction of the smooth muscles of the gastrointestinal tract, thereby slowing intestinal peristalsis, causing bloating, nausea, and difficulty passing gas (Ningrum et al., 2020). A preliminary study in the Drupadi Room of Bagas Waras Klaten Regional General Hospital showed that most patients after cesarean section were unable to pass gas within 24 hours. This condition indicates that digestive function has not returned to normal, requiring early mobilization intervention to accelerate recovery (Agustin et al., 2020).

Based on these findings, early mobilization needs to be optimally applied in nursing and midwifery care after cesarean section to accelerate digestive function and prevent gastrointestinal complications (Marhamah & Choire, 2021; Ilmi, 2019; Purnomo & Mudhofar, 2020; Ningrum et al., 2020). However, many patients are still reluctant to perform early mobilization due to pain and fear of surgical wounds. Therefore, this study aims to determine the effect of early mobilization on normal digestive function in post-cesarean section patients in the Drupadi Room of Bagas Waras Klaten Regional General Hospital, thereby providing a scientific basis for healthcare workers to optimize early mobilization interventions.

MATERIALS AND METHODS

This study used a quasi-experimental design with a post-test only with control group approach. This design was chosen because the researchers wanted to determine the effect of early mobilization on digestive function normality without randomizing the

control and intervention groups. This design is appropriate for nursing and midwifery research conducted in healthcare settings, where researchers cannot fully control external variables that influence the results (Sumarto, 2020).

This study was conducted in the Drupadi Room of Bagas Waras Klaten Regional General Hospital in November 2022. This location was chosen because it has a high number of caesarean section deliveries, allowing researchers to obtain samples that meet the research criteria. The research period covered the preparation, implementation, and data processing stages, which were carried out systematically so that the research results could describe the actual conditions in the field.

The population in this study consisted of all mothers who had undergone cesarean section in the Drupadi Room of Bagas Waras Klaten Regional General Hospital, totaling 38 people. The researchers used purposive sampling, which is a sampling technique based on specific considerations in line with the research objectives (Duli, 2019). Based on the Slovin formula with a precision level of 5%, a sample of 34 respondents was obtained, and to anticipate possible dropouts, the sample size was increased by 10% to a total of 40 respondents divided into an intervention group and a control group.

The inclusion criteria in this study included mothers who gave birth by cesarean section and had not passed gas 4 hours after surgery, were willing to be trained in early mobilization, and were willing to be respondents. Meanwhile, exclusion criteria included mothers who experienced an emergency, withdrew during the study, or had passed gas before 4 hours after cesarean section (Mertha, 2020). The independent variable in this study was early mobilization after cesarean section, while the dependent variable was normal digestive function as measured by the time of first flatus.

The research instruments consisted of an observation sheet, early mobilization SOP, mobilization guide leaflet, and respondent consent form (informed consent). The validity of the instruments was assessed through expert judgment by the supervising lecturer and nursing practitioners to ensure that the content was appropriate for the research objectives. The reliability of the instruments was tested through inter-rater reliability testing to ensure that the flatus time observations made by the researchers and enumerators were consistent and objective (Solimun et al., 2020).

Data analysis included univariate analysis to describe the characteristics of the respondents and bivariate analysis to determine the differences in digestive function between the intervention and control groups. The Shapiro-Wilk normality test showed that the data were normally distributed, so an independent t-test with a significance level of 0.05 was used (Mertha, 2020). This study also complied with research ethics principles, including informed consent, anonymity, data confidentiality, beneficence, non-maleficence, and justice, in accordance with health research ethics standards (Roflin et al., 2021).

RESULTS

Table 1. Characteristics of Respondents Based on Age and Education in the Drupadi Room of Bagas Waras Klaten Regional General Hospital (n = 40)

| Characteristics | Category | Treatment Group n (%) | Control Group n (%) |
|-----------------|----------|--------------------------|------------------------|
| Age (years) | < 20 | 3 (15) | 5 (25) |
| | 21–30 | 12 (60) | 14 (70) |
| | 31–40 | 5 (25) | 1 (5) |

| Characteristics | Category | Treatment Group n (%) | Control Group n (%) |
|-----------------|-----------|--------------------------|------------------------|
| Education | Basic | 7 (35) | 5 (25) |
| | Secondary | 12 (60) | 12 (60) |
| | High | 1 (5) | 3 (15) |

Table 1. Shows that the majority of respondents were aged 21–30 years and had a secondary education. These characteristics indicate that most mothers after cesarean section were of productive age and had a sufficient level of education to understand health information.

Table 2. The Effect of Early Mobilization on the Time of Flatus in Post-Cesarean Section Patients (n = 40)

| Group | Average Flatus Time (minutes) | Standard Deviation | n | <i>p-value</i> |
|--------------------------------------|----------------------------------|-----------------------|----|----------------|
| Treatment (Early Mobilization) | 206.40 | 69.63 | 20 | <0.001 |
| Control (Without Early Mobilization) | 485.75 | 159.89 | 20 | |

Table 2 shows the analysis using an independent t-test, which indicates a p-value of 0.001 (<0.05), meaning there is a significant difference between the treatment and control groups. Early mobilization significantly accelerates the time to flatus in patients after cesarean section in the Drupadi Room at Bagas Waras General Hospital in Klaten.

DISCUSSION

The results of this study indicate a significant effect of early mobilization on the normalization of digestive function in patients after cesarean section. The study showed a significant difference between the treatment and control groups, where the group that underwent early mobilization experienced flatus more quickly. These results reinforce that early mobilization can increase intestinal peristaltic activity and accelerate the return of normal digestive function (Agustin et al., 2020; Purnomo & Mudhofar, 2020).

This study is in line with the findings of Herman et al. (2019), which show that early mobilization effectively accelerates the time to flatus in patients after cesarean section. The same was also found by Ningrum et al. (2020), that early mobilization can prevent abdominal distension and improve bowel function. Thus, these results reinforce the theory that early mobilization is one of the effective non-pharmacological interventions to accelerate gastrointestinal system recovery after major surgery.

Physiologically, early mobilization stimulates the parasympathetic nervous system, which plays a role in increasing intestinal motility. Simple physical activities such as leaning to the right, leaning to the left, and sitting on the edge of the bed can improve blood circulation and oxygenation to the abdominal tissues, thereby increasing muscle tone and intestinal peristaltic contractions (Marhamah & Choire, 2021). This mechanism helps reduce gas buildup in the digestive tract and accelerates flatus time (Ilmi, 2019).

The implications of this study suggest that early mobilization should be incorporated into standard nursing and midwifery care for post-cesarean section patients. Health workers need to provide assistance and education on the importance of early mobilization 4–6 hours after surgery so that patients are more active and prevent

complications such as paralytic ileus and abdominal distension (Citrawati et al., 2021; Damayanti et al., 2021).

A limitation of this study is that the measurement of flatus time still depends on subjective patient reports, rather than direct observation by the researcher. In addition, the sample size was limited to only one inpatient room, so the results of this study cannot be generalized to a wider population. Nevertheless, this study provides important empirical data for maternity nursing practice (Roflin et al., 2021).

Based on the results obtained, it is recommended that early mobilization be routinely and standardized in post-cesarean section care rooms. Further research could examine the effect of early mobilization on other variables such as pain levels, length of stay, and patient satisfaction. Education for patients and families also needs to be improved so that early mobilization can be carried out safely and consistently (Nasution, 2021; Herawati & Prapnawati, 2021).

CONCLUSION

The results of this study indicate that early mobilization has a significant effect on improving normal digestive function in patients after cesarean section in the Drupadi Room at Bagas Waras Klaten Regional General Hospital. Mothers who underwent early mobilization experienced flatus more quickly than those who did not, indicating the optimal return of intestinal peristaltic function. This finding reinforces that early mobilization is an effective non-pharmacological intervention to accelerate gastrointestinal system recovery, improve patient comfort, and prevent post-operative complications. Based on these results, it is recommended that healthcare providers, particularly midwives, integrate early mobilization as part of the standard of care for post-cesarean section patients, and provide education to patients and their families regarding the importance of performing early mobilization correctly and purposefully.

ACKNOWLEDGEMENT

The author would like to express their deepest gratitude to the Director of the Surakarta Ministry of Health Polytechnic for providing support and facilities throughout the research process.

REFERENCES

- Agustin, R., Koeryaman, M. T., & DA, I. A. (2020). Gambaran tingkat cemas, mobilisasi, dan nyeri pada ibu post operasi sectio sesarea di RSUD dr. Slamet Garut. *Jurnal Kesehatan Bakti Tunas Husada: Jurnal Ilmu-ilmu Keperawatan, Analis Kesehatan dan Farmasi*, 20(2), 223–234.
- Bobo, Y. Y., Ardiyani, V. M., & Yasin, D. D. F. (2019). Efektivitas mobilisasi dini terhadap pemulihan peristaltik usus pada pasien post operasi di RSUD Waikabubak Sumba Barat-NTT. *Nursing News: Jurnal Ilmiah Keperawatan*, 4(2).
- Citrawati, N. K., Rahayu, N. L. G. R., & Sari, N. A. M. E. (2021). Hubungan tingkat pengetahuan dengan sikap ibu dalam mobilisasi dini pasca sectio cesarean. *Health Care: Jurnal Kesehatan*, 10(1), 1–7.
- Dahlan, S. (2020). *Besar sampel dalam penelitian kedokteran dan kesehatan* (5th ed.). Salemba Medika.

- Dahlan, S. (2021). *Statistik untuk kedokteran dan kesehatan* (6th ed.). Epidemiologi Indonesia.
- Damayanti, E., Ayu, N. R. I., & Utami, T. (2021). Hubungan pengetahuan dengan sikap ibu post sectio caesarea tentang mobilisasi dini. *Jurnal Keperawatan Raflesia*, 3(2), 33–40.
- Duli, N. (2019). *Metodologi penelitian kuantitatif: Beberapa konsep dasar untuk penulisan skripsi dan analisis data dengan SPSS*. CV Budi Utama.
- Herawati, V. D., & Prapnawati, H. U. (2021). Hubungan tingkat pengetahuan dengan aktivitas mobilisasi dini pada pasien pasca operasi sesar. *Jurnal Ilmu Keperawatan Indonesia (JIKI)*, 14(2), 19–26.
- Herman, A., Santoso, B., & Yunitasari, E. (2019). The effect of early mobilization on intestinal peristaltics in patients after a cesarean section in Kendari City Hospital. *Jurnal Ners*, 14(3), 288–291.
- Ilmi, N. (2019). Pengaruh ambulasi dini terhadap waktu flatus pada pasien post SC dengan spinal anestesi di ruang nifas RSUD Dr. R. Soedjono Selong. *PrimA: Jurnal Ilmiah Ilmu Kesehatan*, 5(2).
- Imansari, J., Yulifah, R., & Panggayuh, A. (2019). Pemberian komunikasi, informasi, edukasi (KIE) dengan motivasi ibu dalam melakukan mobilisasi dini post sectio caesarea. *Jurnal Pendidikan Kesehatan (e-Journal)*, 8(1), 36–49.
- Januriwasti, D. E. (2019). Pengaruh kecemasan, usia, dan faktor budaya pada ibu nifas post SC terhadap pelaksanaan mobilisasi dini. *Jurnal Ilmiah Obsgin*, 11(2), 13–20.
- Kamsatun, K. (2018). Mobilisasi dini ibu post sectio caesarea di RSUD Soreang. *Jurnal Ilmu dan Teknologi Kesehatan*, 5(2), 149–169.
- Katuuk, M. E., & Bidjuni, H. (2018). Pengaruh mobilisasi dini terhadap peristaltik usus pada pasien pasca laparatomi di RSU GMIM Pancaran Kasih Manado. *Jurnal Keperawatan*, 6(1).
- Kusumaningrum, A. T., & Kartikasari, R. I. (2020). Improvement of self efficacy on early mobilization capabilities in post sectio caesaria. *Jurnal Midpro*, 12(1), 88–98.
- Marhamah, E., & Choire, A. N. (2021). Literature review: Efektivitas mobilisasi dini untuk meningkatkan peristaltik usus pada pasien pasca operasi abdomen. *Jurnal Keperawatan Karya Bhakti*, 7(1), 25–38.
- Mertha, I. M. L. (2020). *Metode penelitian kuantitatif dan kualitatif*. Anak Hebat Indonesia.

- Mustikarani, Y. A., Purnani, W. T., & Mualimah, M. (2019). Pengaruh mobilisasi dini terhadap penyembuhan luka post sectio caesaria pada ibu post sectio caesaria di RS Aura Syifa Kabupaten Kediri. *Jurnal Kesehatan*, 12(1), 56–62.
- Nadiya, S., & Mutiara, C. (2018). Hubungan mobilisasi dini post sectio caesarea dengan penyembuhan luka operasi di ruang kebidanan RSUD dr. Fauziah. *Journal of Healthcare Technology and Medicine*, 4(2), 187–195.
- Nasution, Z. (2021). Hubungan pengetahuan ibu dengan tindakan mobilisasi dini pasca sectio caesarea di Rumah Sakit Umum Herna Medan. *Elisabeth Health Journal*, 6(2), 150–156.
- Ningrum, W. A. C., Azhima, A. N., & Suratun, S. (2020). Waktu muncul dan frekuensi peristaltik usus pada pasien post operasi dengan mobilisasi dini. *Jurnal Ilmu Keperawatan dan Kebidanan*, 11(1), 78–85.
- Nurfitriani, N. (2017). Pengetahuan dan motivasi ibu post sectio caesarea dalam mobilisasi dini. *Jurnal Psikologi Jambi*, 2(2), 31–38.
- Octavia, Y. T., Panjaitan, M., Lumbantoruan, J., & Napitupulu, M. M. (2020). Hubungan pengetahuan dengan sikap ibu post sectio caesarea dalam mobilisasi dini di RSU Sari Mutiara Lubuk Pakam tahun 2019. *Jurnal Health Reproductive*, 5(2), 36–42.
- Polit, D. F., & Beck, C. T. (2018). *Essentials of nursing research: Appraising evidence for nursing practice* (9th ed.). Wolters Kluwer.
- Purnomo, H., & Mudhofar, M. N. (2020). Perbedaan mobilisasi dini 6 jam dan 8 jam terhadap peristaltik usus pada pasien post operasi dengan anestesi umum di RS. dr. R. Soeprapto Cepu. *Jurnal Studi Keperawatan*, 1(1), 9–12.
- Puspitaningrum, E. M. (2017). Gambaran pengetahuan ibu nifas post sectio caesarea tentang ambulasi dini di RSIA Annisa Kota Jambi. *Menara Ilmu*, 11(78), 72–79.
- Putri, M. (2019). Pengaruh pemberian pendidikan kesehatan tentang mobilisasi dini post sectio caesaria terhadap tingkat pengetahuan ibu post partum sectio caesaria di RS Setio Husodo Kisaran tahun 2019. *Jurnal Gentle Birth*, 2(2), 18–29.
- Rahmadhani, W. (2022). The role of early mobilization on wound healing after sectio caesarea. *Journal of Sexual and Reproductive Health Sciences*, 1(1), 7–14.
- Riset Kesehatan Dasar (Riskesdas). (2018). *Laporan nasional Riskesdas 2018*. Badan Penelitian dan Pengembangan Kesehatan Kementerian Kesehatan RI.
- Rizka Dhianingtyas, R. (2020). *Pengaruh mobilisasi dini ROM pasif terhadap waktu flatus pasien pasca bedah ortopedi dengan anestesi umum di RS Ortopedi Prof. Dr. R. Soeharso Surakarta* [Doctoral dissertation, STIKes Kusuma Husada Surakarta].

- Rofiqoch, I., & Yuliani, D. A. (2019). Pelaksanaan pendidikan kesehatan mobilisasi dini oleh bidan di wilayah Kabupaten Banyumas. *Jurnal Ilmiah Medsains*, 5(1), 46–52.
- Roflin, E., Liberty, I. C., & Pariyana. (2021). *Populasi, sampel, variabel dalam penelitian kedokteran*. Nasya Expanding Management.
- Sitorus, S. (2021). *Pemberdayaan ibu hamil untuk perilaku pemilihan persalinan upaya menurunkan sectio caesarea indikasi non medis*. Yayasan Kita Menulis.
- Solimun, Armanu, & Fernandes, A. A. R. (2020). *Metodologi penelitian kuantitatif perspektif sistem (mengungkap novelty dan memenuhi penelitian)*. UB Press.
- Subiastutik, E., & Maryanti, S. A. (2022). *Buku ajar asuhan kebidanan persalinan*. PT Nasya Expanding Management.
- Suciawati, A. (2017). Faktor-faktor yang berhubungan dengan mobilisasi dini pasien post sectio caesarea di RSIA AMC Metro Lampung. *Jurnal Impuls Universitas Binawan*, 3(1), 17–23.
- Sumarto. (2020). *Teori dan aplikasi metodologi penelitian*. CV Andi.
- Tumanggor, B. E. (2021). Hubungan pengetahuan dan sikap dengan perilaku mobilisasi dini pada ibu post sectio caesarea di ruang rawat gabung kebidanan RSUD H. Abdul Manap Kota Jambi. *Jurnal Ilmiah Universitas Batanghari Jambi*, 21(3), 983–988.
- World Health Organization. (2019). *World health statistics 2019: Monitoring health for SDG's, sustainable development goals*. World Health Organization.
- Yanti, E., & Fridalni, N. (2019). Mobilisasi dini pada ibu post sectio caesarea. *Jurnal Abdimas Saintika*, 1(1), 136–140.