



THE APPLICATION OF EVIDENCE-BASED NURSING CARE FOR PATIENTS AFTER A CESAREAN SECTION WITH GLAUCOMA COMPLICATIONS: A CASE REPORT

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ABSTRACT

Preeclampsia occurring concurrently with glaucoma in pregnant women is a complex clinical condition that is rarely reported, thus requiring evidence-based nursing care to prevent maternal complications and permanent vision impairment during the perinatal period and following a section cesarean (SC). Describes the application of evidence-based nursing care for patients with preeclampsia complicated by glaucoma following a cesarean section. A descriptive case study was conducted on one patient (Mrs. S, P4A3) at PKU Muhammadiyah Delanggu General Hospital through interviews, physical examinations, review of medical records, and observation. Data analysis guided evidence-based interventions focusing on preeclampsia sign monitoring, interdisciplinary collaboration with ophthalmology for intraocular pressure management, and post-surgical care. The patient maintained clinical stability with no acute deterioration, infection, or visual worsening during hospitalization. Integrated evidence-based nursing care and multidisciplinary collaboration effectively maintain clinical stability in patients with complex preeclampsia and post-cesarean glaucoma comorbidities.

Keywords: caesarean section; case report; evidence-based nursing; glaucoma; pre-eclampsia

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INTRODUCTION

Cesarean section (C-section) is one of the most commonly performed obstetric surgical procedures in the world, with a prevalence that continues to rise due to various medical, social, and demographic factors (Sitdikova et al., n.d.). According to data World Health Organization (WHO, 2021), the use of cesarean sections continues to rise globally, accounting for more than 1 in 5 births (21%), and this figure is projected to continue increasing to nearly one-third (29%) of all births by 2030. On the other hand, glaucoma a chronic eye disease characterized by increased intraocular pressure presents unique challenges when it occurs during the perinatal period, as the hormonal and physiological changes of pregnancy can affect intraocular pressure (Uzun et al., 2025). The complexity of managing patients with comorbid conditions such as glaucoma during and after SC underscores the importance of an evidence-based approach to improve recovery and reduce the risk of complications (Sari et al., 2025).

In Indonesia, the cesarean section rate has also shown a significant upward trend year over year. The 2023 Indonesian Health Survey (SKI) reported a cesarean section prevalence of 25.9% in Indonesia, a sharp increase compared to the 2018 Riskesdas data, which recorded a rate of 17.6%. This increase far exceeds the WHO's recommended threshold of approximately 10–15% of all deliveries. The high rate of cesarean sections has also led to an increase in the number of cases requiring complex postoperative nursing care, including for mothers with comorbid conditions such as glaucoma (Darmi Arda, 2021). The Ministry of Health has promoted the adoption of evidence-based nursing (EBN) to reduce maternal mortality and accelerate postpartum recovery, but its

implementation still varies across health facilities, particularly when treating patients with complex conditions such as glaucoma, which require specialized knowledge that is not yet widely available (Zalia et al., 2026).

At the regional level, Central Java also reflects the national trend of rising cesarean section rates. According to 2023 data from the Ministry of Health of the Republic of Indonesia, the cesarean section rate in Central Java stands at 24.9%, a figure that also exceeds the WHO's ideal threshold (Dinkes Jateng, 2023). These high figures reflect the heavy workload faced by hospitals in Central Java in providing high-quality postoperative care, while disparities in infrastructure and access to specialized services across regions continue to affect the consistency of nursing practices. Hospitals in this region must balance the high volume of cesarean section patients with the need for individualized care, particularly for patients with comorbidities such as glaucoma, while multidisciplinary collaboration to manage such cases in many hospitals is still in the development stage (Wulandari et al., 2023).

PKU Muhammadiyah Delanggu General Hospital, as a regional hospital serving a diverse patient population in the Klaten area of Central Java, has also seen an increase in the number of cesarean sections in line with these regional and national trends, including cases requiring complex nursing care, such as postpartum patients with glaucoma complications. The hospital has launched a training program and developed clinical guidelines to support nursing staff, in an effort to bridge the gap between theory and practice in the field when managing cases with comorbidities (Dinkes Jateng, 2023).

The urgency of implementing EBN in post-C-section patients with glaucoma complications stems from the risk of postoperative complications, delayed wound healing, and visual impairment, all of which require close monitoring. The occurrence of pregnancy complications can be attributed to risk factors present during pregnancy and the presence of comorbidities during pregnancy (Sulastri, Diktina & Rahayu, 2019). Timely and accurate nursing assessments, accompanied by evidence-based interventions, can prevent adverse outcomes, given that the coexistence of surgical conditions and chronic eye diseases requires a holistic approach that integrates various clinical perspectives. However, gaps remain in the application of evidence-based nursing (EBN) in such complex cases; many nurses still lack adequate access to the latest scientific evidence or sufficient training to translate that evidence into practice, a situation exacerbated by institutional barriers such as staffing shortages, a lack of interdisciplinary communication, and inadequate clinical guidelines.

In response to these challenges, PKU Muhammadiyah Delanggu General Hospital has developed a number of innovations, including the development of clinical pathways that integrate obstetric and ophthalmologic considerations, a continuing professional development program focused on the evaluation and application of scientific evidence, regular multidisciplinary team meetings, and the use of electronic medical records to monitor patient progress and support evidence-based decision-making (Kumari et al., 2021). Overall, given the high prevalence of SC both nationally (25.9%) and in Central Java (24.9%)—which far exceeds WHO standards—the implementation of evidence-based nursing care for post-cesarean section patients with glaucoma complications is a crucial step in clinical practice at PKU Muhammadiyah Delanggu General Hospital. This case report was prepared to illustrate the importance and impact of implementing EBN in the context of specialized care to promote optimal health outcomes.

METHOD

This study used a descriptive case report design to describe the application of evidence-based nursing care for a patient with preeclampsia complicated by post-Cesarean section glaucoma. The subject of the case study was Mrs. S, a 36-year-old woman with a medical diagnosis of P4A3, who experienced preeclampsia characterized by glaucoma and underwent delivery via cesarean section

in the maternity ward of PKU Muhammadiyah Delanggu General Hospital, Klaten, Central Java. Data collection took place from the initial assessment on June 3, 2026, through the post-Cesarean section recovery period, including the results of follow-up diagnostic tests on June 3, 2026.

Data collection was conducted through interviews (anamnesis) with patients and their families to obtain information on identity, chief complaint, medical history, obstetric and gynecological history, and psychosocial data, as well as a head-to-toe physical examination covering general condition, vital signs, eyes, breasts, abdomen (cesarean section incision, fundal height, uterine contractions), extremities, and the anogenital region (documentary review of medical records, including laboratory test results), and direct observation of changes in clinical condition, to support the analysis of the alignment of interventions with the principles of evidence-based nursing.

The data were analyzed using a descriptive-narrative approach by comparing clinical findings against evidence-based care standards, including the American College of Obstetricians and Gynecologists (ACOG, 2024) guidelines for preeclampsia and the American Academy of Ophthalmology (AAO, 2024) guidelines for glaucoma, through the stages of assessment, nursing diagnosis, planning, implementation, and evaluation. This study adhered to research ethics principles, including informed consent from the patient and family, as well as the confidentiality of the patient's identity by using an initial (Mrs. S).

RESULT

Data for this case report were collected through a structured four-part approach: in-depth interviews (anamnesis) with the patient and her family to gather demographic data, chief complaints, medical, obstetric, and gynecological history, and psychosocial support system information; direct head-to-toe physical examination focusing on vital signs, ocular assessment, and abdominal evaluation (fundal height, uterine contraction, and incision site integrity); document review of electronic medical records, laboratory results, and ophthalmology consult notes; and continuous direct clinical observation during hospitalization. The collected data were analyzed using a descriptive-narrative approach by comparing clinical findings against evidence-based standards—specifically the American College of Obstetricians and Gynecologists (ACOG, 2024) guidelines for preeclampsia and the American Academy of Ophthalmology (AAO, 2024) guidelines for glaucoma—following the systematic stages of assessment, nursing diagnosis, planning, implementation, and outcome evaluation.

Patient Information

The patient is Mrs. S, a 36-year-old Muslim woman, with a medical diagnosis of P4A3, preeclampsia complicated by glaucoma, who delivered via cesarean section. The patient's obstetric history includes two previous spontaneous vaginal deliveries (2008 and 2011), three abortions, one spontaneous vaginal delivery in 2022, and one cesarean section in 2026, resulting in a current obstetric status of P4A3. During her pregnancy, the patient attended 4 routine prenatal care (ANC) visits and underwent 6 ultrasounds. Her past medical history includes hypertension and ongoing treatment for glaucoma, along with a history of previous hospitalization due to postpartum hemorrhage. Socially, the patient lives with her husband and has good family support during her care.

Clinical Findings

The patient presented with complaints of dizziness, nausea, blurred vision, and epigastric pain, with a urine protein level of +1 supporting a diagnosis of preeclampsia. Physical examination revealed the patient was alert and oriented (GCS 15); the conjunctiva and sclera were within normal limits; the suprapubic cesarean section incision was clean and dry with no signs of infection; the fundal height was 2 fingers below the umbilicus; and bowel sounds were audible. Laboratory results showed hemoglobin 10.4 g/dl, red blood cells $3.98 \times 10^6/\mu\text{L}$, and hematocrit 31.1 Vol%, indicating

mild anemia consistent with a history of previous postpartum bleeding, while white blood cell and platelet counts were within normal limits.

Therapeutic Interventions

Nursing interventions focus on three areas: (1) monitoring warning signs of preeclampsia, including blood pressure, deep tendon reflexes, urine protein, and fluid balance; (2) management of glaucoma complications through collaboration with the ophthalmology team to ensure continuity of intraocular pressure-lowering therapy and education on adherence to eye drop medication; and (3) post-cesarean section recovery through aseptic wound care, monitoring of uterine involution, nutritional and iron support given the presence of mild anemia, and early, gradual mobilization. A multidisciplinary approach involving nurses, obstetricians, and ophthalmologists was implemented to ensure the integration of the care plan. During hospitalization, the patient's condition remained stable with no signs of infection, no worsening of visual symptoms, and no recurrent postpartum bleeding.

Table 1.
Respondent characteristics

Respondent characteristics	f	%
Age	36 years	100
Gender	Female	100
Religion	Islam	100
Obstetric status (Gravida/Para/Abortus)	P4A3	100
Medical diagnosis	Pre-eclampsia with glaucoma	100
Mode of delivery	Section Caesarea	100
Comorbidity	Hypertension, Glaucoma	100
ANC frequency during pregnancy	4 visits	100
History of postpartum Hemorrhage	Present (previous delivery)	100

DISCUSSION

The nursing interventions implemented for Mrs. S demonstrate the application of comprehensive, evidence-based nursing care in managing the complex condition of preeclampsia with complications of post-Cesarean section glaucoma. Consistent monitoring of blood pressure, urinary protein, and warning signs of preeclampsia was conducted in accordance with ACOG guidelines (2024), while collaboration with the ophthalmology team to ensure continuity of glaucoma therapy reflects the principle of holistic care, given that optic nerve damage caused by glaucoma is irreversible, making early detection and management critical (Jayaram et al., 2023)

This patient's complaint of blurred vision requires clinical acumen to determine the cause—whether it stems from retinal vasospasm due to preeclampsia (Qin et al., 2020) or from the worsening of the patient's pre-existing glaucoma, making careful assessment key to successful care. The finding of decreased hemoglobin and hematocrit levels is also an important consideration given the patient's history of previous postpartum hemorrhage; therefore, monitoring uterine involution is an integral part of the care plan, in addition to focusing on preeclampsia and glaucoma (Kumari et al., 2021).

Several challenges were encountered in managing this case, including the patient's complex obstetric history (P4A3 with three previous abortions and a history of postpartum hemorrhage), which required vigilance regarding the risk of recurrent bleeding, the presence of two overlapping chronic conditions (hypertension and glaucoma) that required interdisciplinary coordination, and mild anemia, which added to the complexity of planning nutritional interventions and postoperative recovery (Haninditya et al., 2021).

These findings underscore the importance of a comprehensive, non-fragmented nursing assessment when caring for patients with more than one chronic condition. Nurses need to be able to integrate

obstetric history, history of chronic diseases, and diagnostic test results when developing a care plan, while a multidisciplinary approach involving obstetricians and ophthalmologists is crucial, given that the patient's visual symptoms may have more than one possible cause.

CONCLUSION

The application of evidence-based nursing care for Mrs. S, a patient with P4A3 who developed preeclampsia complicated by post-Cesarean section glaucoma, successfully maintained the patient's clinical stability without signs of acute deterioration during her hospitalization. Interventions that included monitoring for warning signs of preeclampsia, interdisciplinary collaboration with the ophthalmology team, and evidence-based post-C-section care proved effective in managing the complexity of this case.

REFERENCES

- ACOG. (2024). Management Of The First and Second Stages Of Labor.
- Darmi Arda, H. H. (2021). Penerapan Asuhan Keperawatan Post Op Section Caesarea dalam Indikasi Preeklampsia Berat. 10, 447–451. <https://doi.org/10.35816/jiskh.v10i2.631>
- Dinkes Jateng. (2023). Profil Kesehatan Provinsi Jawa Tengah. Buku Profil Kesehatan Provinsi Jawa Tengah Tahun 2023, 267.
- Haninditya, B., Andayani, T. M., Yasin, N. M., Ilmu, M., Universitas, F., Mada, G., Farmasi, F., & Gadjah, U. (2021). Analisis Kepatuhan Pelaksanaan Clinical Pathway Sesarea di Sebuah Rumah Sakit Swasta di Yogyakarta Seksio. 9(1), 38–45.
- Jayaram. (2023). Glaucoma Now and Beyond Authors: 1–34.
- Kumari, R., Saha, B. C., Onkar, A., & Ambasta, A. (2021). Management of glaucoma in pregnancy – balancing safety with efficacy. 1–14. <https://doi.org/10.1177/25158414211022876>
- Qin, Q., Chen, C., & Cugati, S. (2020). Ophthalmic associations in pregnancy. 49(10), 673–680.
- Sari, D. P., Susanto, A., & Burhan, A. (2025). GAMBARAN BROMAGE SCORE PADA PASIEN SECTIO CAESAREA. 9, 8454–8465.
- Sitdikova, I. D., Khalfiev, I. N., State, I. N. U. C., & Republic, C. (n.d.). actors affecting the frequency of Caesarean section.
- Sulastri, Diktina, A. A., & Rahayu, L. T. (2019). Penyakit Penyerta Kehamilan sebagai Gambaran Kejadian Komplikasi selama Persalinan. 252–258.
- Uzun, İ., Mutaf, Ç., Reyhan, A. H., Yüksekayla, F., Colak, E., & Yolaçan, M. (2025). Pregnancy-induced ocular changes : impacts on intraocular pressure , the cornea , and the anterior chamber.
- WHO. (2021). WHO Statement on Caesarean Section Rates (Vol. 24, Issue 1). <https://doi.org/10.5005/ijopmr-24-1-2>
- Wulandari, L. A., Maesaroh, S., Retno, S. N., Jamaan, T., & Marlina, L. (2023). Asuhan Kebidanan Berkelanjutan Pada Ibu Hamil Trimester Iii Hingga Keluarga Berencana : Studi Kasus Abstrack Abstrak. 101–105.
- Zalia Qotivaa, Reska Handayanib, Prima Yoselinac, Y. A. (2026). Asuhan Keperawatan Maternitas Pada Pasien Dengan Post Op Sectio Caesarea. 03(01), 357–365.

