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# Narcotic use and pain control after cesarean section

## Abstract

Opioid use and dependence have markedly increased in recent years which has led to an opioid epidemic. Various factors that have contributed to this crisis, one being the over prescription of opioid medication to post-surgery patients. In the United States cesarean section deliveries accounted for 31.8% of all births in 2020. Therefore, it is necessary to evaluate pain control and narcotic use in the postpartum period. Most studies on postpartum pain control focus primarily on the immediate inpatient postoperative period. This study investigates pain control and Percocet use in the 3-day post-discharge period of women who underwent Cesarean delivery at The Brooklyn Hospital Center (TBHC) from January to June 2021. This study evaluated 100 women; the data shows that patients took on average 4 out of 36 Percocet pills; only 11% of the total prescribed dose. Additional factors were taken into consideration including pain scale up to 3 days post-discharge, pain management alternatives, home childcare, family size, and prior opioid use. This study concludes that post cesarean delivery patients were overprescribed narcotics upon discharge from the hospital. Considerations should be made for smaller doses, spaced-out hourly doses, and shorter interval of days. Patients should be advised that if additional pain medication is required to contact their provider and be educated on the importance of properly disposing unused opioid medications.

**Keywords:** cesarean section, Percocet, cesarean delivery pain management, percocet narcotic, narcotic use, enhanced recovery after surgery

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**Abbreviations:** TBHC, The Brooklyn Hospital; ERAS, enhanced recovery after surgery

## Background

The United States has been battling the opioid epidemic over the past two decades. Both opioid use and dependence has markedly increased in past years with one of the most common reasons for its prescription being cesarean deliveries. 2020 CDC data collection reports the cesarean delivery rate has increased to 31.8%, from 31.7% in 2019, amounting to 1,486,692 cesarean deliveries.[1] Therefore, is it essential that pain control and narcotic use postpartum should be evaluated. Younger women are particularly disposed to addiction and dependence as well as certain ethnic, racial, and socioeconomic groups.[2] Approximately 4-6% of postpartum women will continue with complaints of pain up to 2-6 months postpartum.[3,4] As such, pain control is an important aspect of patient care for postpartum women. It is increasingly important to find the balance between avoiding the over-prescription of opioid medication and appropriate pain management in postoperative patients. Most studies regarding pain control for postpartum women (especially post cesarean section patients) have focused mainly on the immediate postpartum period in the hospital.[5,6]

In this prospective study, patients who underwent cesarean section at The Brooklyn Hospital Center (TBHC) were surveyed for their use and need of post-operative Percocet. This study evaluates how effective pain control is specifically related to the number of opioids taken in the 3-day post-operative period, post-discharge. Additional factors were taking into consideration when surveying the population present at TBHC including: Pain scale up to 3-days post-discharge, pain management alternatives, home childcare, family size, and ultimately the number of tablets taken in the 72-hour post-operative evaluation period.

## Aim and significance

Evaluate the use of opioids and pain control during 3-days post-op after discharge. The information collected will help outline and stratify opioid prescription utilization within the post cesarean delivery community at TBHC in a more efficient and appropriate manner.

## Methodology

This study enrolled 100 post-cesarean delivery patients who delivered at TBHC between January and June 2021. These patients were contacted within the 1-week post-operative, post-discharge period for survey evaluation of pain score and Percocet use within 72 hours of discharge. Patients were asked about pain score (1-10; 1=minimal, 10=intolerable) and Percocet use (5/325mg, 1-2 pills, q4hrs, for 72hrs, PRN, 36 pills in total prescribed on discharge). Age, weight, anesthesia type, surgical indication, home care and support, and additional medication use were evaluated.

## Results

Demographics data collected showed various racial/ethnic backgrounds; 54% Middle Eastern, 36% African American, 4% Non-Black Hispanic, 3% Caucasian, 1% Asian, 1% Caribbean, and 1% Native American (Figure 1). The average age of the patient population was 32 years old. Average weight was 88.96kg with an average BMI of 33.65kg/m2. Sixty eight percent had no past medical history while 32% did have past medical history including: Diabetes, gestational hypertension, chronic hypertension, hypothyroidism, sickle cell anemia, asthma, depression, bipolar disorder, anxiety, fibroids, obesity, endometriosis, and/or deep vein thrombosis. The average procedure time was 75 minutes. The indications for cesarean section were 49% elective, 47% unplanned, and 4% emergent. Thirty-five percent of the procedures were repeat cesarean section. The mode of anesthesia delivered during the procedure included 56% spinal

anesthesia, 38% epidural/spinal combined anesthesia, and 6% general anesthesia (Figure 2). Seventy-five percent of patients had no prior use of any opioid medication. Fifty-eight percent of patients used Percocet in conjunction with Ibuprofen. Seventy percent of patients had their Percocet prescription filled the day of discharge. Thirty-two percent of patients had taken opioid medication in the past, which 68% had never taken opioids before. The patients in this survey had an average of two living children in the home; with a range of one to four children in the household. Five percent of patients had no assistance or help with childcare at home while 95% had some form of help from their partner, parent, sibling, or professional help. Twelve percent of patients were solely bottle feeding, 15% were solely breastfeeding, while 73% were using a combination of breast and bottle feeding. Twenty-six percent of patients had complications during their hospital stay; 8% had postpartum hemorrhage, and 17% had preeclampsia/hypertension.

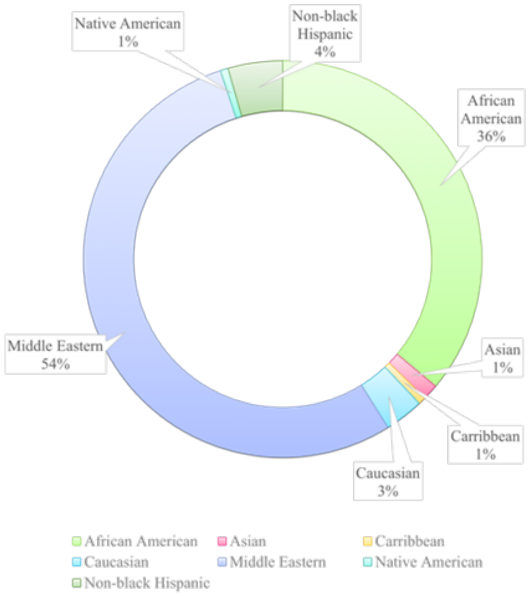


**Figure 1** Population diversity.

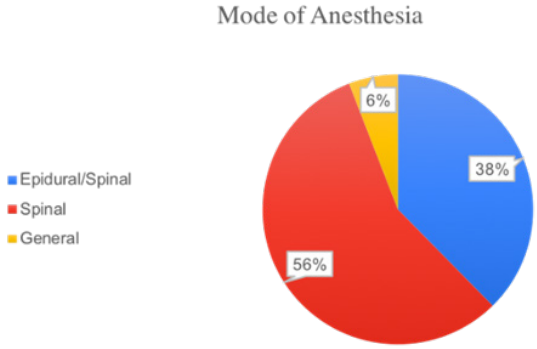


**Figure 2** Mode of anesthesia.

At the end of the 3-day, post-discharge period data was collected via phone call survey to determine patients' pain levels and Percocet consumption. The average number of Percocet pills used totaled 4 out of 36; 11% of the total prescription. The average pain scale was 7 on Day 1, 6 on Day 2, and 5 on Day 3, with a range of 2-10. The average number of Percocet pills used per day was 1 on Day 1, 1 on Day 2, and 1 on Day 3, with a range of 0-4 pills per day (Figure 3). Sixteen percent of patients did not use any of their prescribed Percocet.

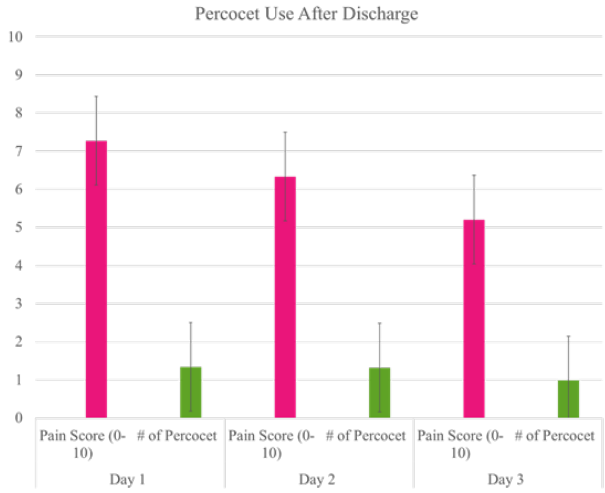


**Figure 3** Percocet use and pain level after discharge.

## Discussion

Out of the 100 patients included in this study, data reflects that majority of patients use significantly less than the prescribed dose of Percocet; considerably less than expected - 16% did not require any opioid medication. The average number of Percocet pills used was 4 of 36, only 11% of the total prescription. Study data also shows that in anticipation of pain precautions, majority (70%) of patients filled their prescription on the day of discharge. In this Brooklyn community-based study, it can be said that multiple factors may contribute to Percocet use including, but not limited to: previous narcotic use, home help and support, parity, pain management with additional medications, household size, and overall need/self-discretion for self-medication, and past medical history. Based on the data collected from the population, it would be expected that risk factors evaluated in the study would increase opioid use consumption; however, the data supports the opposite, minimal prescription use.

Although independent risk factors can be attributed to the need for Percocet; data from this study supports that as an institution, The Brooklyn Hospital Center Obstetrics and Gynecology providers are overprescribing opioids in the postpartum period for cesarean section patients, in anticipation of patient needs without malicious intention based on evaluation of risk factors. However, patients only used on average 11% of their prescription, while 16% did not use any of their Percocet prescription. This can potentially result in excess narcotic use without regulation. In light of the global opioid epidemic, considerations should be made for shorter interval of days, smaller dosing, or spaced-out hourly dosing; with the caveat that should patients require additional pain control to contact their provider. Additional considerations should be made for the off-label use of left-over Percocet pills, disposal, or distribution of the excess Percocet pills. Patients should be educated on what to do with leftover prescriptions and how to properly return or dispose of leftover prescriptions, especially opioid medications.

Based on the data collected from this study, considerations may be made for review of narcotic dosing, not limited to Percocet, for post-operative pain control and management. Opioid based medication dosages should be revised; a lower concentration of opioid may be as effective and less harmful. Alternative protocols for enhanced recovery after surgery (ERAS) have been designed to facilitate early recovery by preserving organ function and reducing stress response

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inflammation in the post-operative state.[7] Medications outlined by ERAS are non-opioid based targeting energy pathways and immune and vascular inflammatory processes to promote post-operative recovery.[7] These pathways are designed to optimize total body recovery, encouraging early ambulation, appropriate nutrition, tissue preservation, and decreased demand for opioid based medications.[7] Multiple pathways have been designed for implementation for specialty specific procedures; however, the utility of ERAS is limited to only those and can be deemed effective towards post-cesarean sections patients.

## Conclusion

Opioid use and dependence have increased in recent years which can be attributed to a multitude of factors. One major contributing factor is the prescription of narcotics to postoperative surgical patients. The data from this study shows that on average patients took 4 out 36 Percocet pills, only 11% of their prescription. This indicates that the institution overprescribes Percocet to postpartum cesarean delivery patients without malicious intention, in anticipation of complete use of the prescription based on present risk factors. Further considerations should be made for smaller doses, shorter interval of days, and spaced-out hourly dosing, lower empiric dosages, and integration of ERAS protocols. Additionally, considerations are required on the off-label use of leftover Percocet pills, disposal, and distribution of leftover medication.

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## Conflicts of interest

Authors declare that there is no conflict of interest.

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