

# Exploring barriers to postpartum sterilization

## Abstract

Sterilization is a prevalent form of contraception, yet not all women who desire postpartum sterilization undergo the procedure. This retrospective cohort study aimed to investigate reasons for non-performance of postpartum sterilization. These reasons included lack of documentation, no longer desiring the procedure, and desiring another form of contraception. Undergoing cesarean delivery significantly increased the likelihood of undergoing postpartum sterilization, suggesting a need for prioritizing sterilization access amongst patients delivering vaginally. Further research is warranted to explore clinical decision-making and patient uptake of postpartum sterilization in larger samples. Addressing documentation issues may facilitate shared decision-making and improve access to sterilization.

**Keywords:** sterilization, postpartum, contraception, tubal ligation, patient decision-making, fertility

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## Introduction

Sterilization is one of the most effective and popular forms of contraception in America, utilized by 18.6% of women aged 15-49.<sup>1</sup> Tubal sterilization involves the intentional removal or blockage of fallopian tubes, offering permanent contraception and preventing unplanned pregnancies.<sup>2</sup> Unplanned pregnancy presents significant public health issues leading to delayed prenatal care, higher rates of preterm birth and infant mortality, financial strain, and psychological and emotional turmoil.<sup>3</sup> Performing sterilization during the postpartum hospitalization offers numerous advantages including improved convenience, cost-effectiveness, patient satisfaction, and reduced anesthesia risk.<sup>4</sup> With a failure rate of < 1% in the first year and an excellent safety profile, postpartum sterilization represents a reliable contraceptive option.<sup>5</sup>

Despite its safety, efficacy, and convenience, not all women expressing desire for postpartum sterilization undergo the surgery.<sup>5</sup> Preoperative counseling should comprehensively cover surgical techniques, efficacy, safety, potential complications, and alternative contraception options like long-acting reversible contraceptives (LARCs).<sup>6</sup> Patients should be informed of factors associated with regret, including young age, unstable relationships, and low parity. The procedure's permanence must be emphasized, as reversal procedures are expensive and often impossible.<sup>1</sup>

Multiple barriers can limit access to sterilization including patient preference, acute risk, access to services, and insurance coverage.<sup>7</sup> Challenges specific to postpartum sterilization include concern for patient regret due to young age or low parity, restrictive laws governing consent processes, physician-driven procedure cancellation, and limited availability of operating rooms and anesthesia providers. These barriers can prevent as many as 50% of women from undergoing the procedure. Given the risk of repeat unintended pregnancy, over 45% of women who requested but did not receive postpartum sterilization may experience another pregnancy within one year after delivery.<sup>1,7</sup>

However, investigations into non-completion of desired postpartum bilateral tubal ligation (PPBTL) are limited, particularly within racially, ethnically and socioeconomically diverse samples. The purpose of this study was to delineate the reasons for non-performance of postpartum sterilization at our institution in order to minimize barriers and improve access to postpartum sterilization for patients desiring this procedure.

## Methods

This retrospective cohort study included patients  $\geq 18$  years old who presented to a New York City community hospital with expressed desire and documented consent for postpartum sterilization between January 2021 and December 2021. Patients were offered participation based on documented completion of New York State sterilization consents (NYS). Patients who did not desire sterilization at the time of delivery, had sterilization completed outside of the postpartum period, or had invalid NYS sterilization consent forms were excluded.

Our primary objective was to examine differences in rates of postpartum sterilization by mode of delivery, surgical history, and race/ethnicity. Descriptive analyses on participants' sociodemographic characteristics and documented reasons for not performing sterilization procedures were reported. Group differences were examined using chi-square tests. Statistical significance was defined by a two-tailed  $p$  value of  $< 0.05$ . Statistical analyses were performed using SAS.

## Results

The sample consisted of 76 patients who expressed desire for postpartum sterilization and completed NYS sterilization consents (Table 1). All patients were multiparous. 41 of 76 patients (53.9%) received a PPBTL. Patients who underwent cesarean delivery were more likely to receive a PPBTL than patients who delivered vaginally (OR=34.8, CI=9.6 - 125.6,  $p < 0.0001$ ). There were no significant differences in rates of PPBTL by BMI ( $p = 0.65$ ), prior surgical history ( $p = 0.74$ ), or race/ethnicity ( $p = 0.97$ ).

Among patients who did not receive a PPBTL, the majority had no documented reason for not performing the procedure ( $n = 22$ , 62.9%) or reported the procedure was no longer desired ( $n = 7$ , 20.0%). The remaining reasons included anemia, operative room availability limitations, prohibitive surgical history, obesity, and preeclampsia.

Almost all patients who did not receive PPBTL presented for postpartum follow-up ( $n = 32$ , 91.4%). Of these, 53.1% ( $n = 17$ ) had interval laparoscopic BTLs scheduled: 9 were completed, 6 were canceled and 2 were lost to follow-up. Of the 23 patients who did not receive sterilization, 51.2% ( $n = 12$ ) did not have a reason documented, and 56.5% ( $n = 13$ ) did not report an alternative method of contraception (Table 2).

**Table 1** Sample characteristics

Variables	Full sample (n=76)
<b>Age</b>	
[M (SD) Range]	34.30 (4.54) Range: 23 - 43
<b>BMI</b>	
[M (SD) Range]	32.62 (5.11) Range: 21.9 - 46.4
<b>Gestational age in days</b>	
[M (SD) Range]	269.80 (7.64) Range: 233 - 287
<b>Parity</b>	
[M (SD) Range]	3.16 (0.99) Range: 2 - 6
<b>Race/Ethnicity</b>	
Asian	n = 10; 13.16%
Black or African American	n = 1; 1.32%
Hispanic or Latino	n = 65; 85.53%

**Table 2** Rates of postpartum bilateral tubal ligation by sociodemographic and clinical characteristics

Variables	PPBTL (n = 41, 54%)	No PPBTL (n = 35, 46%)
<b>Mode of delivery</b>		
Standard Vaginal Delivery	n = 5, 14.71%	n = 29, 85.29%
Cesarean Section	n = 36, 85.71%	n = 6, 14.29%
<b>BMI</b>		
< 40	n = 38; 55.07%	n = 31; 44.93%
≥ 40	n = 3; 42.86%	n = 4; 57.14%
<b>Prior surgical history</b>		
No	n = 34; 53.13%	n = 30; 46.88%
Yes	n = 7; 58.33%	n = 5; 41.67%
<b>Race/Ethnicity</b>		
Asian	n = 6; 60%	n = 4; 40%
Black or African American	n = 0	n = 1; 100%
Hispanic or Latino	n = 35; 53.85%	n = 30; 46.15%

**Note:** Postpartum bilateral tubal ligation (PPBTL).

## Discussion

This study examined rates of postpartum sterilization, revealing that 46.1% of patients who received counseling during prenatal care and consented for postpartum sterilization did not receive the procedure. Cesarean section was a strong significant predictor of receiving PPBTL. However, in most cases, adequate documentation explaining reasons for non-performance of PPBTL was not clearly specified, hindering a comprehensive examination of the issue. Despite nearly all patients presenting for postpartum follow-up, many still did not receive sterilization nor report using an alternative contraceptive method.

These findings underscore the need to improve PPBTL rates among women who desire the procedure. Firstly, patients delivering vaginally may require additional interventions to ensure access to desired sterilization procedures. Utilizing other operative sites within the hospital, such as the main operating room, may enhance postpartum sterilization rates. In cases where PPBTL cannot be performed, implementing an expedited surgical scheduling system for interval BTLs prior to hospital discharge could increase access to the procedure by eliminating the need for additional outpatient scheduling visits. In addition, prioritizing discussion and implementation of alternative contraception methods is crucial.

The main strength of our study stems from its comprehensive examination of a racially, ethnically and socioeconomically diverse sample. Our study also had several limitations. The findings from

this relatively small sample of patients presenting to a community hospital with desire for sterilization may not generalize beyond this context. Additionally, ongoing effects from the COVID-19 pandemic and limited operating room staffing may have impacted the study's outcomes. Lastly, the lack of documentation restricted a deeper exploration of reasons for PPBTL non-completion. Nonetheless, identification of these documentation issues highlights the importance of understanding patient and clinician decision making regarding postpartum sterilization, which can guide quality improvement efforts around documentation and shared decision-making practices. Future studies should encourage better documentation of reasons for non-completion of PPBTL to inform patient- and provider-level interventions aimed at improving sterilization access.

## Conclusion

This retrospective cohort study highlights significant barriers to postpartum sterilization (PPBTL), despite its efficacy and popularity as a contraceptive method. Notably, a considerable proportion of women who desired and consented to PPBTL did not undergo the procedure, with cesarean delivery being a significant predictor of completion. The absence of adequate documentation for non-performance reasons and a lack of alternative contraceptive methods among non-recipients were major findings, indicating gaps in clinical practice and patient care. To improve access to PPBTL, particularly for women delivering vaginally, targeted interventions such as utilizing other operative sites and implementing expedited surgical scheduling

systems are recommended. Additionally, enhancing the thoroughness of preoperative counseling and documentation, and prioritizing alternative contraceptive methods, can address unmet needs and reduce the risk of unintended pregnancies. Future research should focus on larger, more diverse samples to further elucidate barriers and facilitate shared decision-making in postpartum sterilization.

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### Conflicts of interest

The authors report no conflicts of interest.

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