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# RACIAL AND GENDER DISPARITIES IN NEUROAXIAL ANESTHESIA FOR TRAUMATIC HIP REPLACEMENT SURGERIES

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## Introduction

Introduction: Neuraxial blocks offer significant advantages in the setting of hip fracture surgery. These advantages include lower incidence of 1-month mortality and deep vein thrombosis, shorter surgery times and lower frequencies of blood transfusions compared to patients who do not receive neuraxial blocks (1,2). Gender and racial disparities in accessing different aspects of healthcare have been well documented (3). The study goal is to determine if race plays a role in receiving neuraxial blocks during traumatic hip replacement. Further, we also examined if gender disparities extend to anesthetic use in traumatic hip replacement. Finally, we examined whether other factors such as body mass index (BMI), insurance type and age have a correlation with anesthetic choice.

## Materials and Methods

Methods: We performed a retrospective, observational cohort study of the Trauma Quality Improvement Program (TQIP) database from 2017-2019 on patients who underwent traumatic hip replacement. As this data is public and devoid of patient identification information, it is exempt from IRB review requirements as per University of California policy. Patients were categorized as either of neuraxial blocks recipients or non-neuraxial blocks recipients. After adjusting for various variables, multiple logistic regression was performed to study the impact of patient age, sex, BMI, insurance type (Medicaid, Medicare, Private/Commercial, Self-Pay or Other) and race/ethnicity (White, Black, Asian, Hispanic, or Other). The odds ratio for receiving neuraxial blocks was calculated.

## Results/Case Report

Results: A total of 41,661 patients (21,456 Male, 20,205 Female; mean age 56.68 years) were included from the TQIP database for this study. Women were found to be significantly less likely to receive neuraxial blocks prior to traumatic hip replacement compared to men (OR 0.67, 95% CI 0.57-0.80). when stratifying patients by age, older patients were also found to be less likely to receive neuraxial blocks (OR 0.97, 95% CI 0.96-0.98). Insurance type was also found to have a significant finding. Patients with Medicaid and Other insurances were more likely than Medicare patients to receive neuraxial blocks (OR 2.82, 95% CI 1.74-3.00 and OR 2.53, 95% CI 1.86-3.43), while those with Private/Commercial insurance or Self-Pay were significantly less likely to receive a neuraxial blocks than patients with

Medicare (OR 0.18, 95% CI 0.12-0.26 and OR 0.28, 95% CI 0.17-0.44). Hispanic patients were significantly less likely to receive a neuraxial blocks compared to White patients (OR 0.32, 95% CI 0.22-0.46) while Black and Asian patients were more likely to receive a neuraxial blocks compared to White patients (OR 2.11, 95% CI 1.75-2.56 and OR 2.40, 95% CI 1.36-3.98).

## Discussion

Conclusion: Women and Hispanic patients were significantly less likely to receive neuraxial blocks for their anesthesia for traumatic hip replacement. While addressing gender and racial disparities helps raise healthcare awareness, more studies need to be done to identify why these disparities exist so that more directed efforts and policies can be implemented to insure equality in anesthesia care for all patients. Further, similar studies need to be conducted to examine whether similar racial disparities exist in other surgical and traumatic settings.

## References

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- 3) Cameron, K. A., Song, J., Manheim, L. M., & Dunlop, D. D. (2010). Gender disparities in health and healthcare use among older adults. *Journal of women's health (2002)*, 19(9), 1643–1650. <https://doi.org/10.1089/jwh.2009.1701>

## Disclosures

No

## Tables / Images

**Table 1. Multiple logistic regression for factors impacting anesthesia choice**

<b>Variable</b>	<b>Odds ratios</b>	<b>95% CI</b>	<b>P value</b>
<b>Gender (ref. Male)</b>			
<b>Female</b>	0.673	0.5652 to 0.7991	<0.0001
<b>Age</b>	0.9704	0.9657 to 0.9751	<0.0001
<b>BMI</b>	1.00	1.000 to 1.001	0.0183
<b>Insurance (ref. Medicare)</b>			
<b>Medicaid</b>	2.282	1.739 to 3.000	<0.0001
<b>Private/Commercial Insurance</b>	0.1806	0.1247 to 0.2581	<0.0001
<b>Self-Pay</b>	0.2781	0.1710 to 0.4365	<0.0001
<b>Other</b>	2.53	1.860 to 3.431	<0.0001
<b>Private/Commerical Insurance</b>	9.839	7.178 to 13.45	<0.0001
<b>Race/Ethnicity (ref. White)</b>			
<b>Hispanic</b>	0.3286	0.2261 to 0.4626	<0.0001
<b>Black</b>	2.116	1.752 to 2.550	<0.0001
<b>Other</b>	1.009	0.6099 to 1.579	0.9704
<b>Asian</b>	2.4	1.360 to 3.978	0.0013