



Effect of Race and Socioeconomic Background on Rates of Epidural Usage



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Background

Disparities in both access to and outcomes of healthcare are more prevalent in racial and ethnic minority populations. The literature shows that minority patients receive epidurals during labor at a lower rate than their white counterparts¹. Our previous research highlights this disparity in the use of epidurals. This study aims to identify whether socioeconomic status (SES) within ethnic and racial minority groups influences rates of intrapartum epidural analgesia.

Hypothesis

We hypothesize that wealth does not compensate for the difference in rates of epidurals between the Black and White patient populations.

Methods

This is a retrospective chart review. 7172 birthing people at a tertiary care center on Long Island were enrolled between January 1st, 2020 to December 1st, 2021. Patients were divided into groups based on SES (high versus low), using insurance type as a proxy. Patients were also divided into groups based on race, with the non-White group consisting of patients of Hispanic, Asian, Black and Native American races. Rates of epidural usage were then compared across these groups. Statistical analysis was performed using chi-squared and logistic regression.

Results

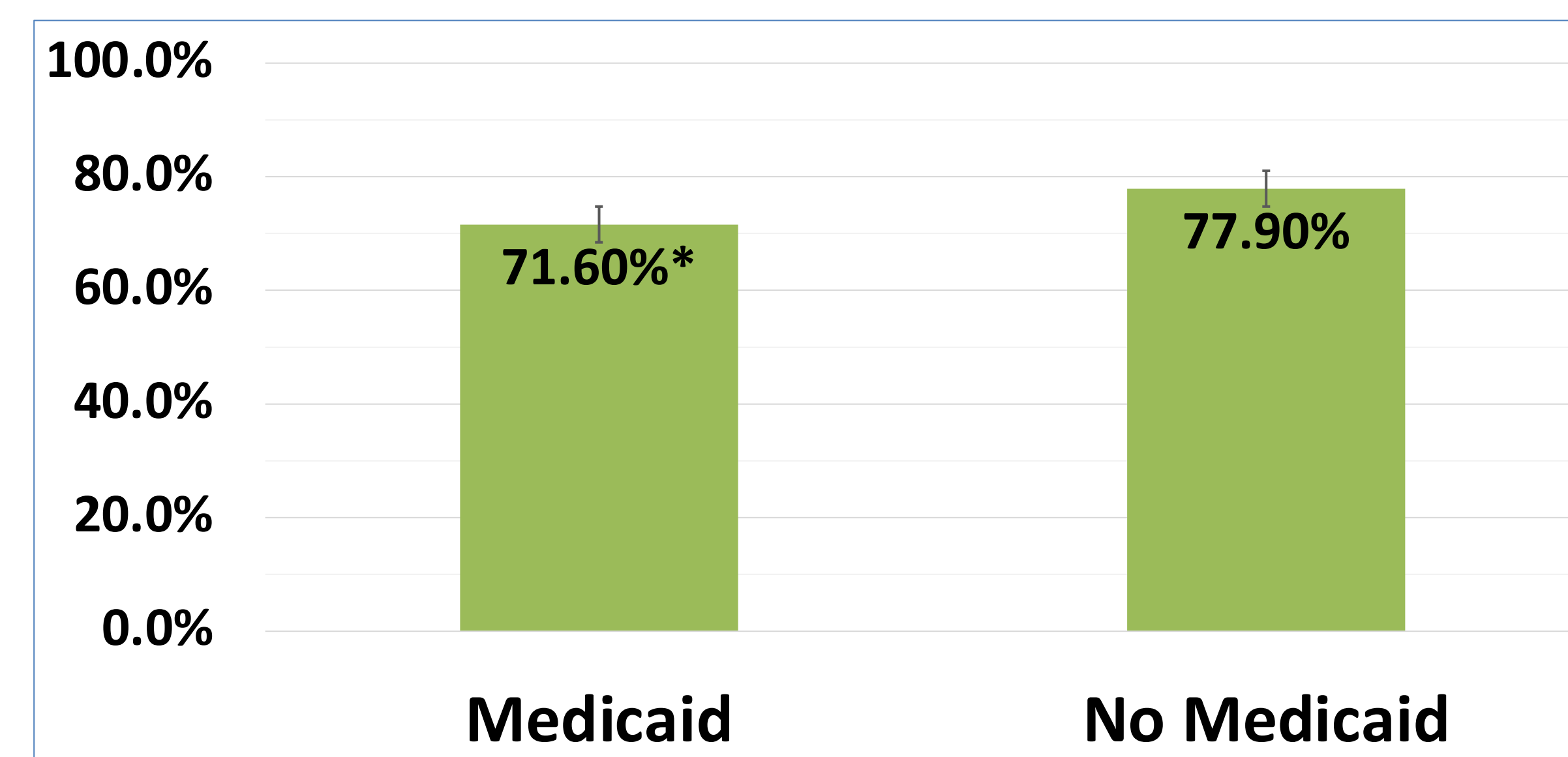


Figure 1: Rate of use of epidurals during labor in patients of all races based on Medicaid status.

*Chi squared test showed that this difference was significant at $p < 0.05$.

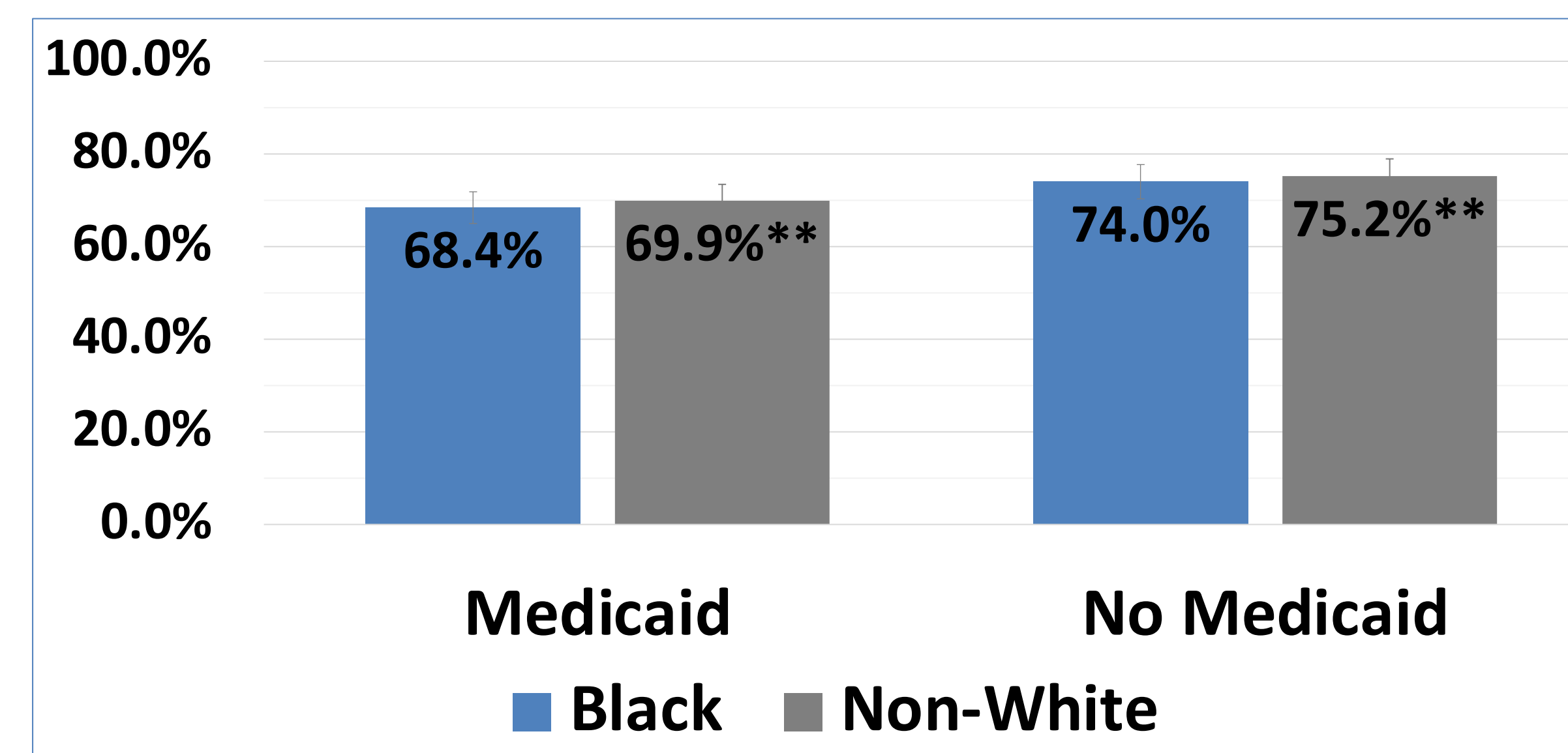


Figure 2: Rate of use of epidurals during labor in Black versus non-White patients in the Medicaid and Non-Medicaid groups.

	Medicaid	No Medicaid	Chi-squared
Black	68.40%	74%	11.08*
White	76.1%	82.1%	22.02*
Chi-squared	282.3*	36.7*	

Table 1: Comparison of rates of use of epidurals during labor between black patients and non-white patients.

*Chi squared test showed that this difference was significant at $p < 0.05$.

Conclusions

Patients of low SES received epidurals at a significantly lower rate than those of high SES (Figure 1). There is no significant difference in epidural usage rates between Black and non-White patients, in both the high and low SES groups (Figure 2). The rate of epidural usage in both the high and low SES groups is significantly lower in Black patients compared to their White counterparts (Table 1). Factors contributing to this discrepancy could include distrust in healthcare workers, lack of prenatal care in minority patients, and providers' implicit bias.² The data indicates that Black patients of high SES still receive epidurals at a lower rate than White patients of low SES (Table 1), although we did not prove this with statistical certainty. Regression analysis further highlights this point, with White patients of low SES being 1.146 times more likely to receive epidurals than Black patients of high SES, although this result was not statistically significant. We employed Medicaid (yes/no) as a proxy for SES which may be less accurate than other markers of SES (e.g.: household income).

Future Direction

Future research should consider other markers of SES to stratify patients, as well as deeper statistical analyses involving more variables to compare across groups.

References

1. Ning Liu et al., "Social disparity and the use of intrapartum epidural analgesia in a publicly funded health care system", American Journal of Obstetrics and Gynecology, Volume 202, Issue 3, 2010
2. Laurent G. Glance, Richard . Wissler, Christopher Glantz, Turner M. Osler, Dana B. Mukamel, Andrew W. Dick; Racial Differences in the Use of Epidural Analgesia for Labor. Anesthesiology 2007