

Disparities in Rates of Epidural Usage: Does Socioeconomic Status Widen the Gap Between Racial and Ethnic Groups?

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Background

Healthcare disparities in access and outcomes are notably more common among racial and ethnic minority populations. The literature indicates that minority patients receive epidurals during labor at a lower rate compared to their white counterparts¹. Our prior work underscores this gap in epidural use. This study seeks to determine whether socioeconomic status (SES) within racial and ethnic minority groups affects the 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

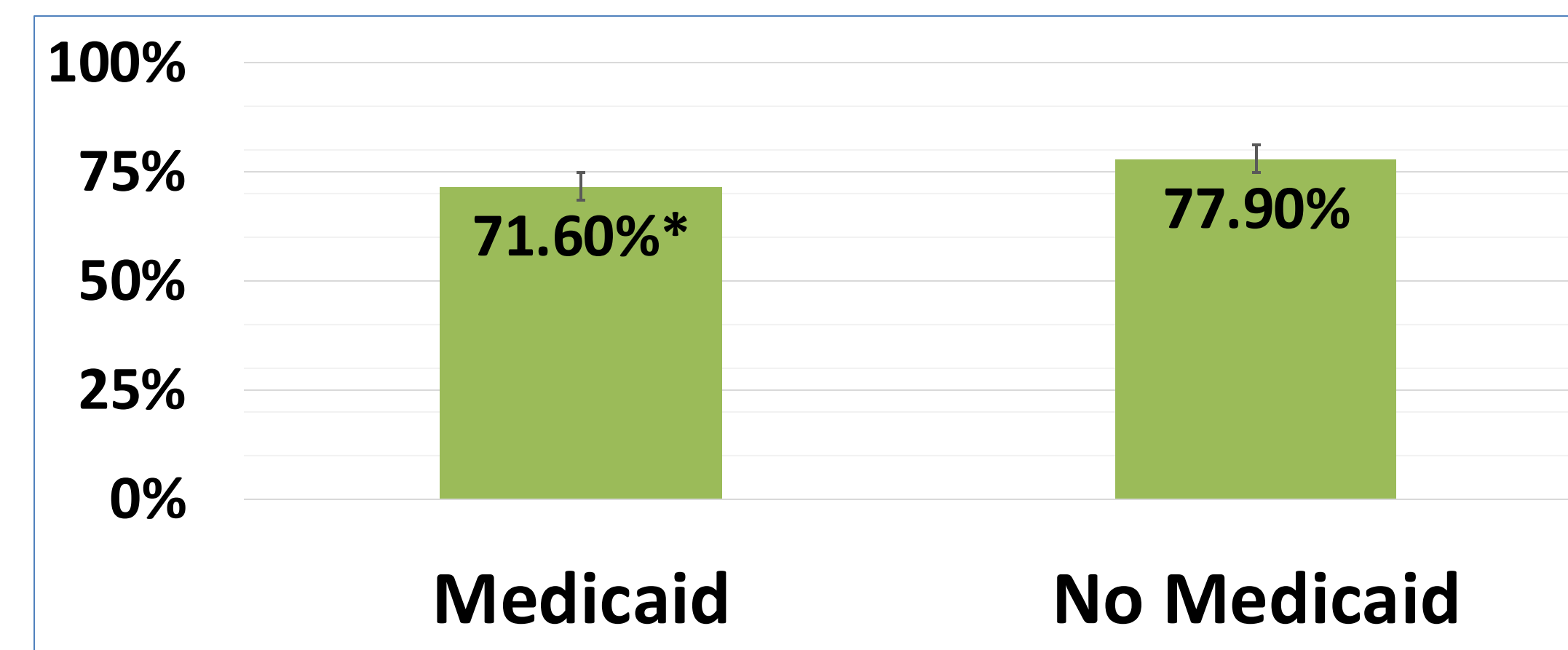


Figure 1: Rate of use of epidurals during labor in patients of all races based on Medicaid status.

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

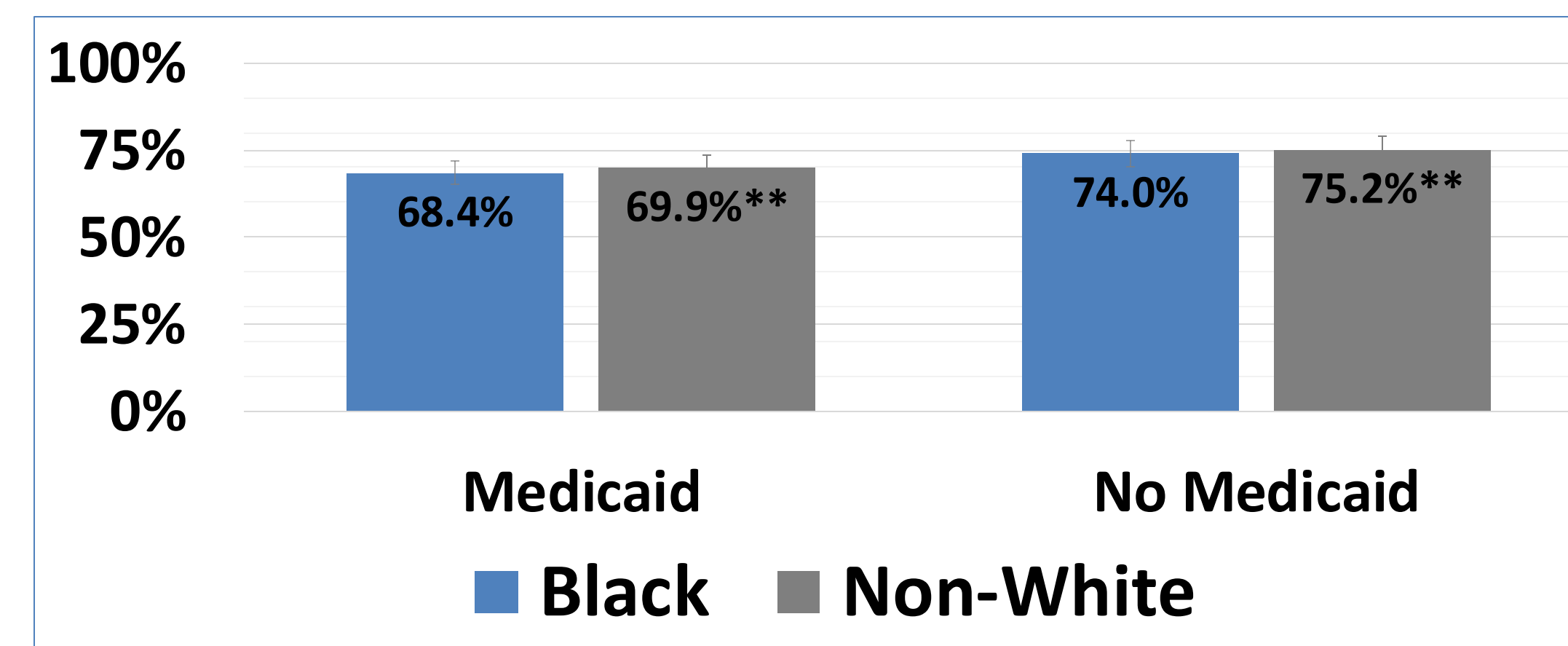


Figure 2: Rate of use of epidurals during labor in Black versus non-White patients in the Medicaid and Non-Medicaid groups.

	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 socioeconomic status (SES) received epidurals at a markedly lower rate than those of high SES (Fig. 1). No significant difference in epidural usage was observed between Black and non-White patients within both high and low SES groups (Fig. 2). However, epidural usage rates in both SES groups were significantly lower for Black patients compared to their White counterparts (Table 1). Contributing factors to this discrepancy may include distrust in healthcare providers, limited prenatal care among minority patients, and providers' implicit biases. The data further indicates that Black patients of high SES receive epidurals at a lower rate than White patients of low SES (Table 1), though this was not statistically proven with certainty. Regression analysis supports this trend, showing that White patients of low SES are 1.146 times more likely to receive epidurals than Black patients of high SES, though this finding was not statistically significant. Medicaid status (yes/no) was used as a proxy for SES, which may not be as precise as other SES indicators, such as 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