

# The Impact of Socioeconomic Status on the Timing of Stereotactic Radiosurgery After a Diagnosis of Brain Metastases

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## Introduction:

Patients' socioeconomic status (SES) influence their health outcomes. When it comes to cancer, the correlation between SES and survival has been demonstrated across the board<sup>3</sup>. SES may also affect management decisions, leading to unequal level of care, which is one of many factors that may explain differences in survival<sup>3</sup>. When treating brain metastases, minimizing the time between diagnosis and stereotactic radiosurgery (SRS) is important since tumor growth can affect patient outcomes<sup>2</sup>. One study reported no statistical difference in the clinical outcomes of patients of different SES treated with SRS, but it did not investigate this time interval<sup>1</sup>.

**The goal of this study is to determine whether patients' socioeconomic status affects the timing of stereotactic radiosurgery after diagnosis of brain metastasis.**

## Methods:

A single-institution review was conducted to analyze the relationship between the SES of cancer patients with brain metastasis and the time interval between brain met diagnosis (BMDx) and SRS:

- Data on race/ethnicity, insurance status, marital status, BMDx, and SRS date was collected using Epic@UNC.
- Patients were excluded if they received whole brain radiotherapy, systemic therapy, or resection before SRS.
- A chi-square test comparing intervals of  $\leq 1$  and  $>1$  month was conducted using SPSS statistics software.

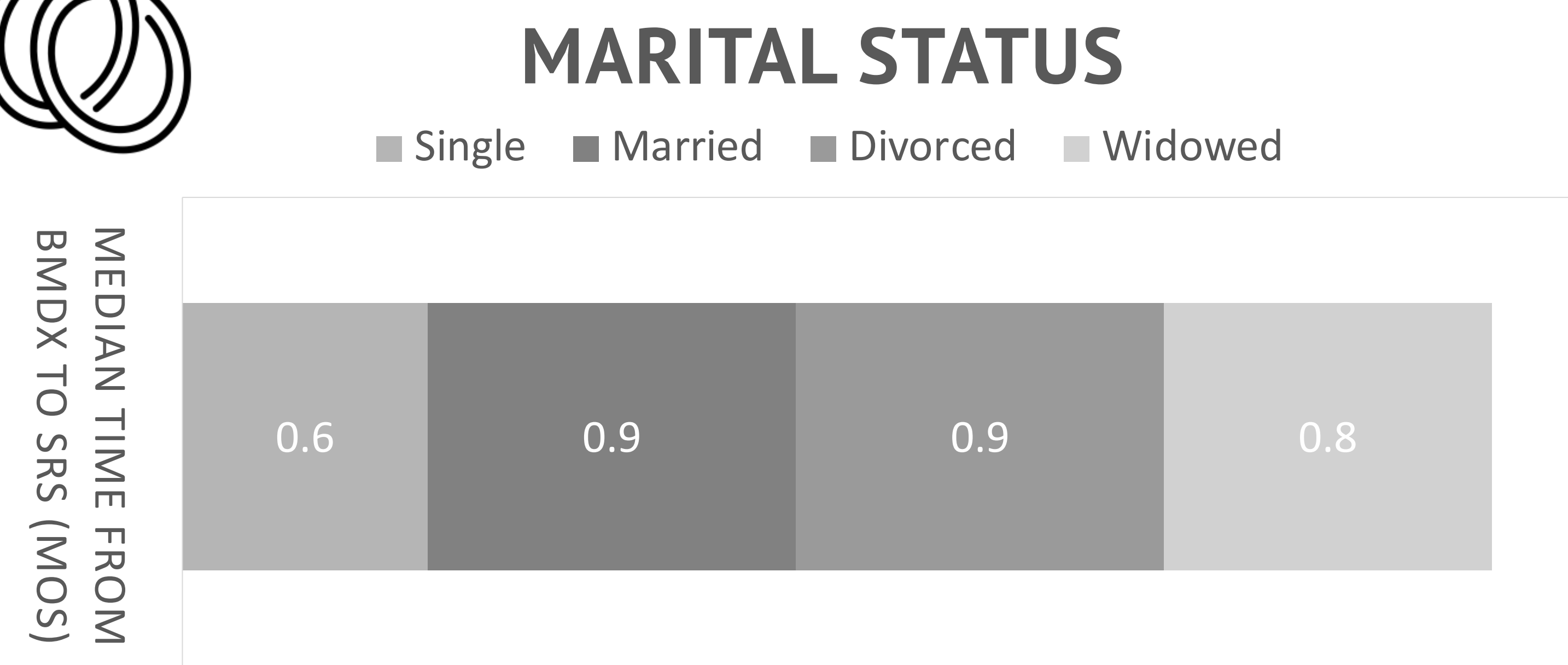
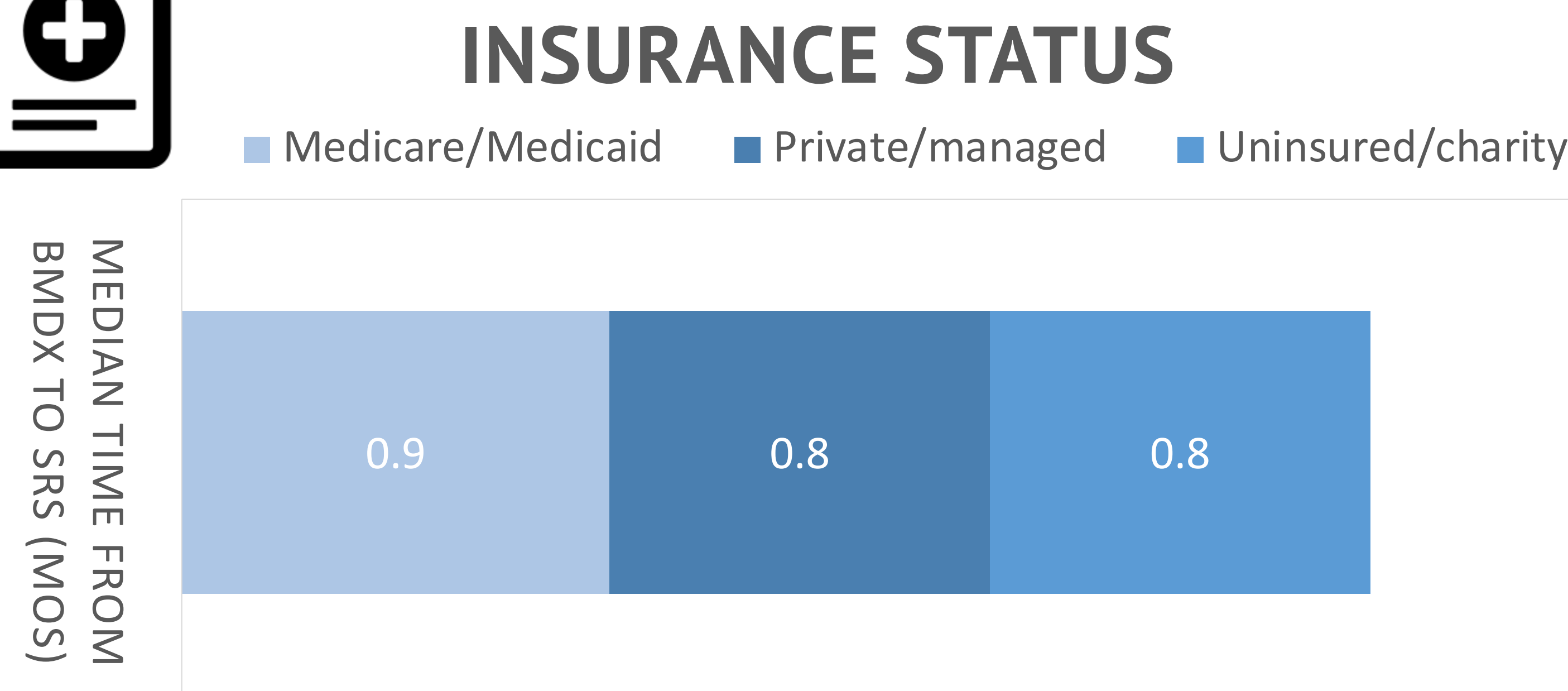
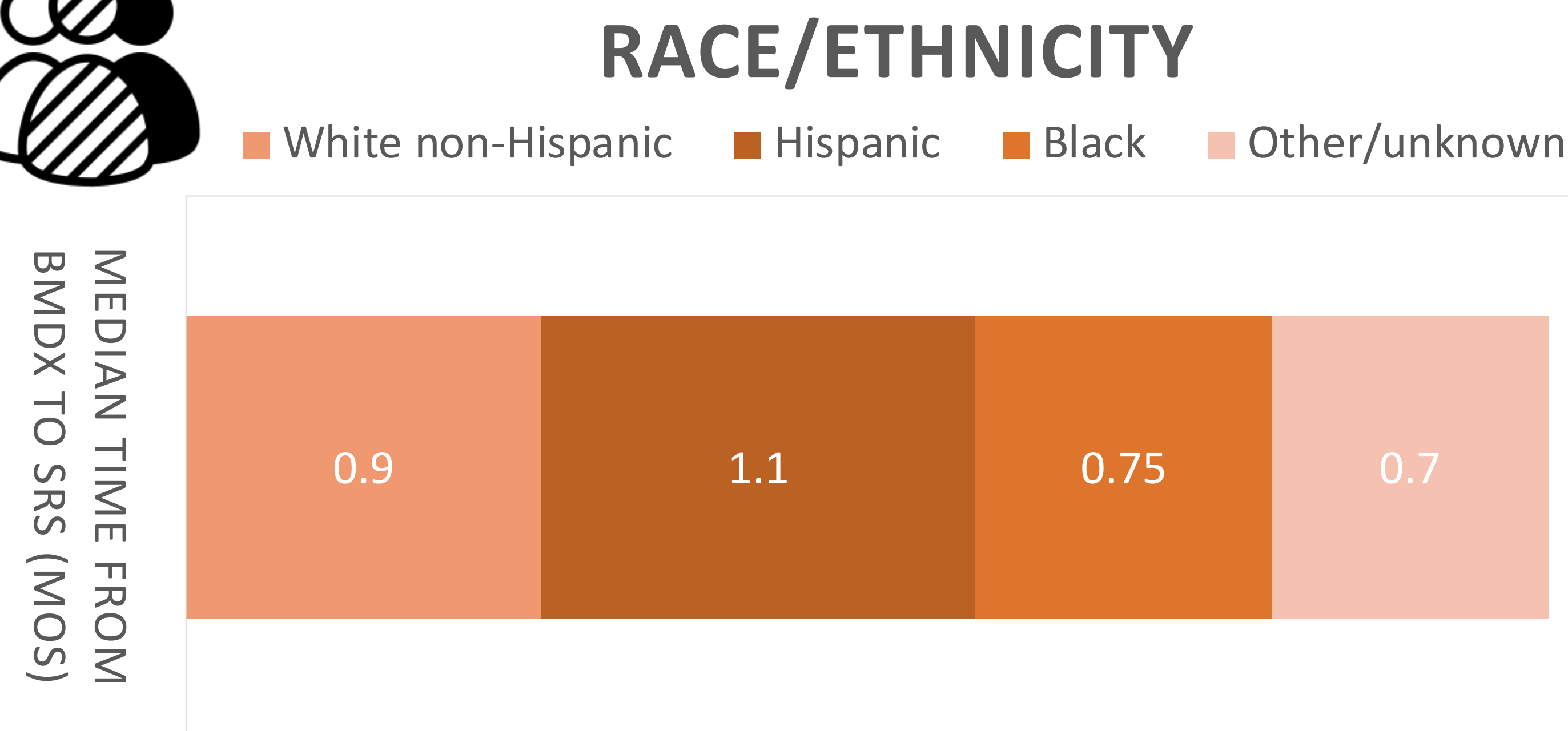
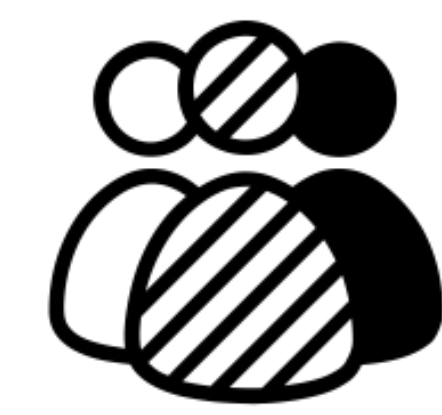
## Data:

Race/ethnicity	n	Median time from BMDx to SRS (mos)	Minimum (mos)	Maximum (mos)
White non-hispanic	71	0.9	0.4	3.9
Hispanic	2	1.1	1.1	1.1
Black	24	0.75	0	1.8
Other/unknown	3	0.7	0.5	1.7

Insurance status	n	Median time from BMDx to SRS (mos)	Minimum (mos)	Maximum (mos)
Medicare/Medicaid	40	0.9	0.1	3.9
Private/managed	33	0.8	0.3	1.9
Uninsured/charity	27	0.8	0	1.4

Marital status	n	Median time from BMDx to SRS (mos)	Minimum (mos)	Maximum (mos)
Single	11	0.6	0	1.3
Married	67	0.9	0.1	3.9
Divorced	13	0.9	0.2	2.4
Widowed	9	0.8	0.4	1.1

## Results:



## Conclusion:

Overall, there was no statistically significant difference between the SES factors studied—race/ethnicity, insurance status, and marital status— on the time from BMDx to SRS.

SES	P-value
Race/ethnicity	0.32
Insurance status	0.56
Marital Status	0.31

These outcomes suggest that patients treated at the UNC Lineberger Comprehensive Cancer Center's Department of Radiation Oncology do not experience delays in their treatment due to socioeconomic factors and receive medical attention within comparable intervals. Future studies should investigate whether such intervals impact patients' overall outcomes. This study is limited by the small sample sizes of widowed, Hispanic, and other/unknown races/ethnicities, weakening conclusions drawn on these groups. Moreover, confounding factors that may have influenced the urgency of treatment, such as symptoms at diagnosis, were not considered. Additional evaluation of SES on health outcomes, such as the investigation of income, gender, and zip code, must be done to further comprehend the challenges individuals of different backgrounds face in healthcare.

## References:

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