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Letter to the Editor

Is trauma center designation associated with disparities in discharge to rehabiliation centers among elderly patients with traumatic brain injury

To the Editor:

We thank Dr. Khosravi for his thoughtful consideration of our manuscript "Is Trauma Center Designation Associated with Disparities in Discharge to Rehabilitation Centers Among Elderly Patients with Traumatic Brain Injury?"[1,2] We found that Black and Latino elderly patients with isolated moderate to severe traumatic brain injury were less likely to be discharged to rehabilitation centers compared to White patients.

We agree with Dr. Khosravi that age and gender are two important demographic characteristics that should be further explored regarding their association with disparities in discharge to rehabilitation centers. In our study population, the majority of patients (1815, 55.1%) were male. We performed a chi square test to analyze the likelihood of disposition to rehab based on gender. There was no statistically significant difference in patients being discharged to rehab based on gender (males (24.9%) vs. females (22.5%, $p = 0.26$). We also evaluated the likelihood of disposition to rehab based on age using a binary logistic regression model. In patients over 65, advancing age was associated with slightly decreased likelihood of disposition to rehabilitation (OR 0.96, $p < 0.001$). It is unclear if this association is independent of potential confounding factors, but the etiology for this difference is an interesting topic that should be analyzed in future studies. As we have previously demonstrated, there are many factors at play when determining disposition, including race, insurance and trauma center designation. Patient age may be another factor associated with disposition to rehabilitation centers.

Dr. Khosravi stated that it is difficult to analyze disparities in discharge without utilizing a standard of care guideline for discharge that is uniformly followed. The NTDB utilizes data from hundreds of different trauma centers around the country, each with their own interpretation and implementation of standards of care. There is no standardized guideline that each center consistently follows. This is a limitation of any observational study of this topic, but could be a feature of additional prospective studies.

Lastly, Dr. Khosravi notes that there is a difference between trauma center levels, as they admit patients with different severities of injury; thus, it would be expected for rate of discharge to rehabilitation centers to vary based on trauma center type. This is indeed what we found, as Level III trauma centers, which generally take care of patients with less severe injuries compared to Level I and II centers, had the lowest likelihood of discharge to rehabilitation centers. As we noted in the paper, this finding could be because these patients presented with less severe injuries. In addition, it could also be secondary to decreased social work support and financial resources at community-based hospitals.

Sincerely, Elizabeth Warnack Gorman MD, Spiros Frangos MD, Charles DiMaggio PhD, Marko Bukur MD, Michael Klein, MD, H. Leon Pachter, MD, and Cherisse Berry, MD, NYU Langone Health.

Declaration of competing interest

No Conflict of Interest.

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