

Introduction

- Hawai‘i reports 117 new traumatic spinal cord injury (tSCI) cases per million residents annually—over twice the U.S. average of 54 per million.
- Nearly 40% of SCI cases in Hawai‘i involve Native Hawaiians, Filipinos, or Pacific Islanders (NHPIF), populations often overlooked or aggregated in national SCI data.
- NHPIF in Hawai‘i face increased social, economic, and health challenges compared to other groups.
- By combining these groups into broader “Asian” or “Other” categories, it becomes difficult to identify specific disparities.
- This study investigates tSCI disparities in Hawai‘i to inform more effective, culturally relevant care.

Methodology

- Retrospective, single-center observational study at The Queen’s Medical Center (QMC), the only ACS-verified level I trauma center in Hawai‘i
- Patient selection included individuals hospitalized for tSCI with ICD-9 codes 806.0–806.9 or 952.0–952.9 (Jan 2014–Sep 2015), and ICD-10 codes S14xx, S24xx, or S34xx (Oct 2015–Dec 2023)
- Total Screened: 26,622 trauma patients
- A total of 968 patients with tSCI were included
- Outcome variables include sex, age at time of injury, injury severity score (ISS), insurance type, mechanism and level of injury, discharge disposition, length of hospital stay, and geographic location of injury across Hawai‘i
- Graphs depict significant difference
- Chi-square test for demographics with $p<0.05$ for significance
- 95% confidence intervals were used to determine if death x ethnicity differed significantly

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Single Center Tertiary Care Experience with Traumatic Spinal Cord Injury in Hawai‘i

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Figure 1. Racial/Ethnic Distributions in tSCI Patients

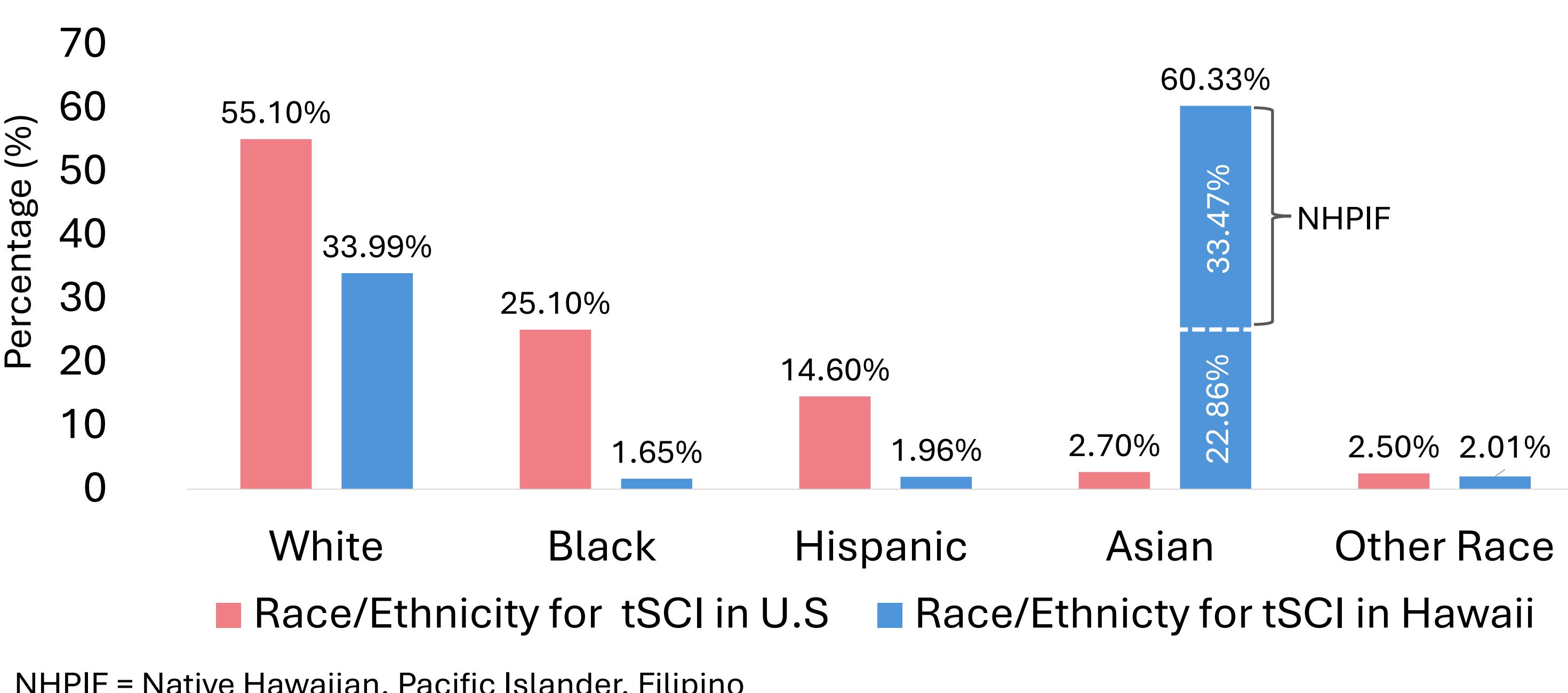


Figure 2. Mechanism of Injury in U.S.

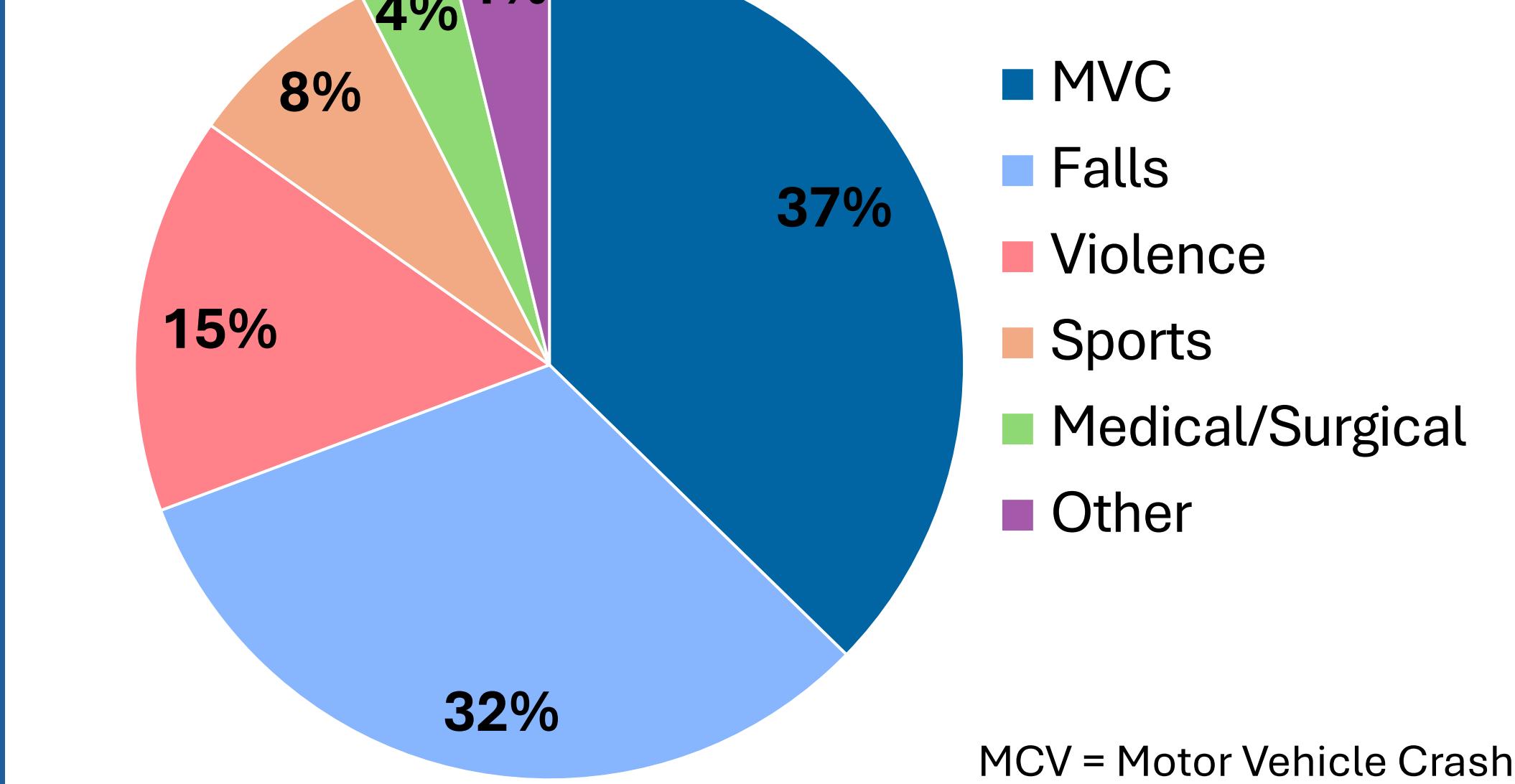


Figure 3. Mechanism of Injury in Hawai‘i

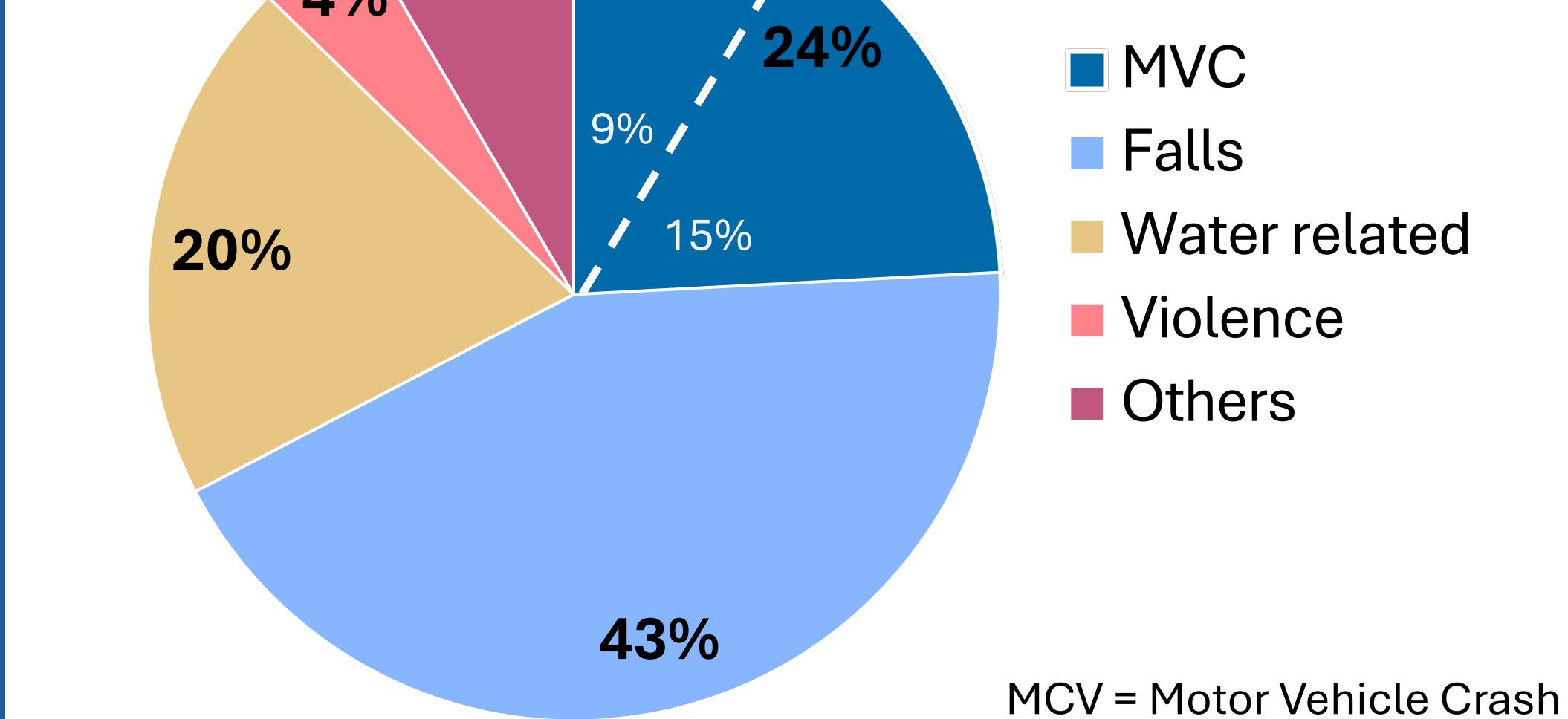


Figure 4. Traumatic Spinal Cord Injury in Hawai‘i by Zip Codes

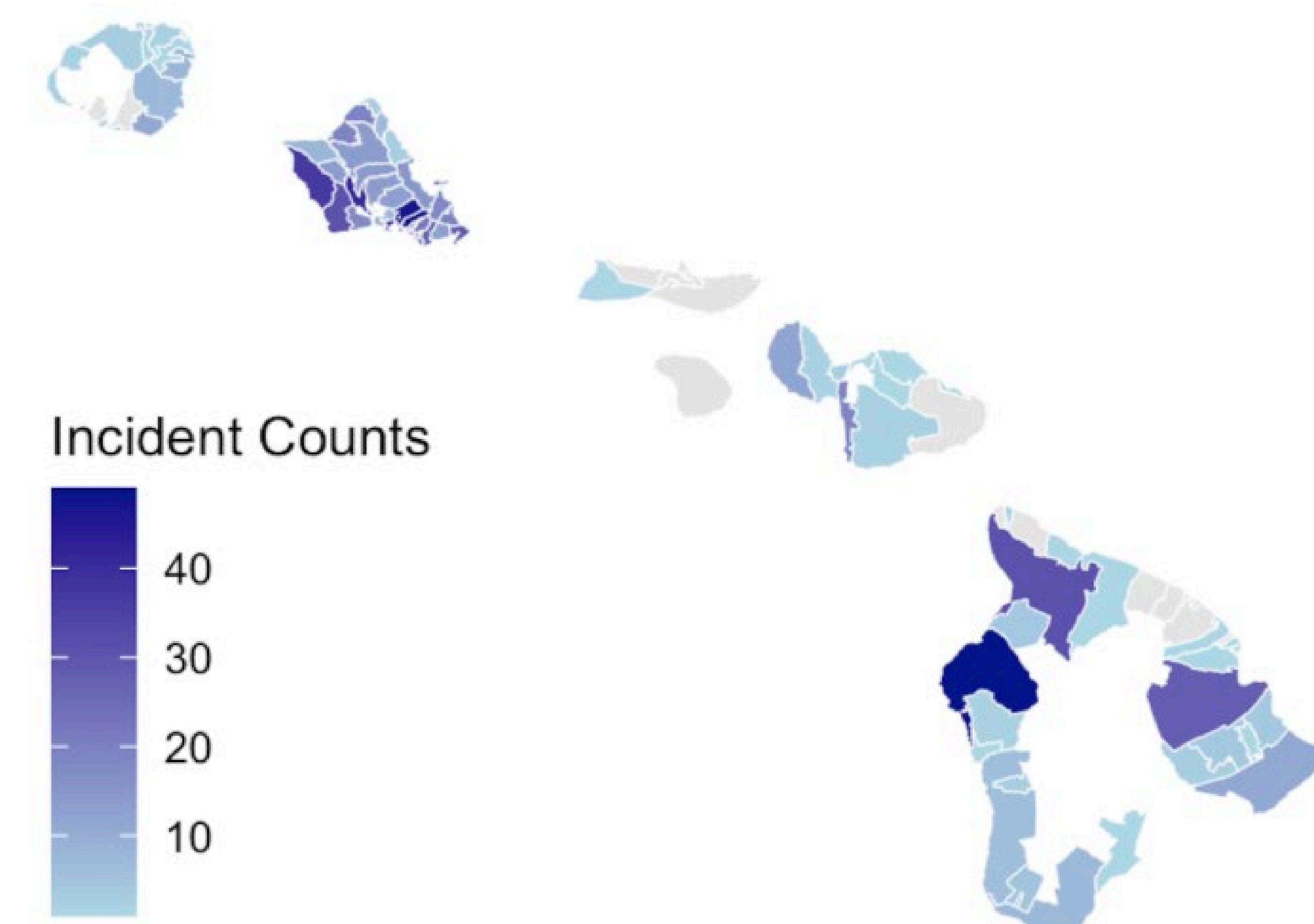


Figure 5. Level of Injury by Residency Status

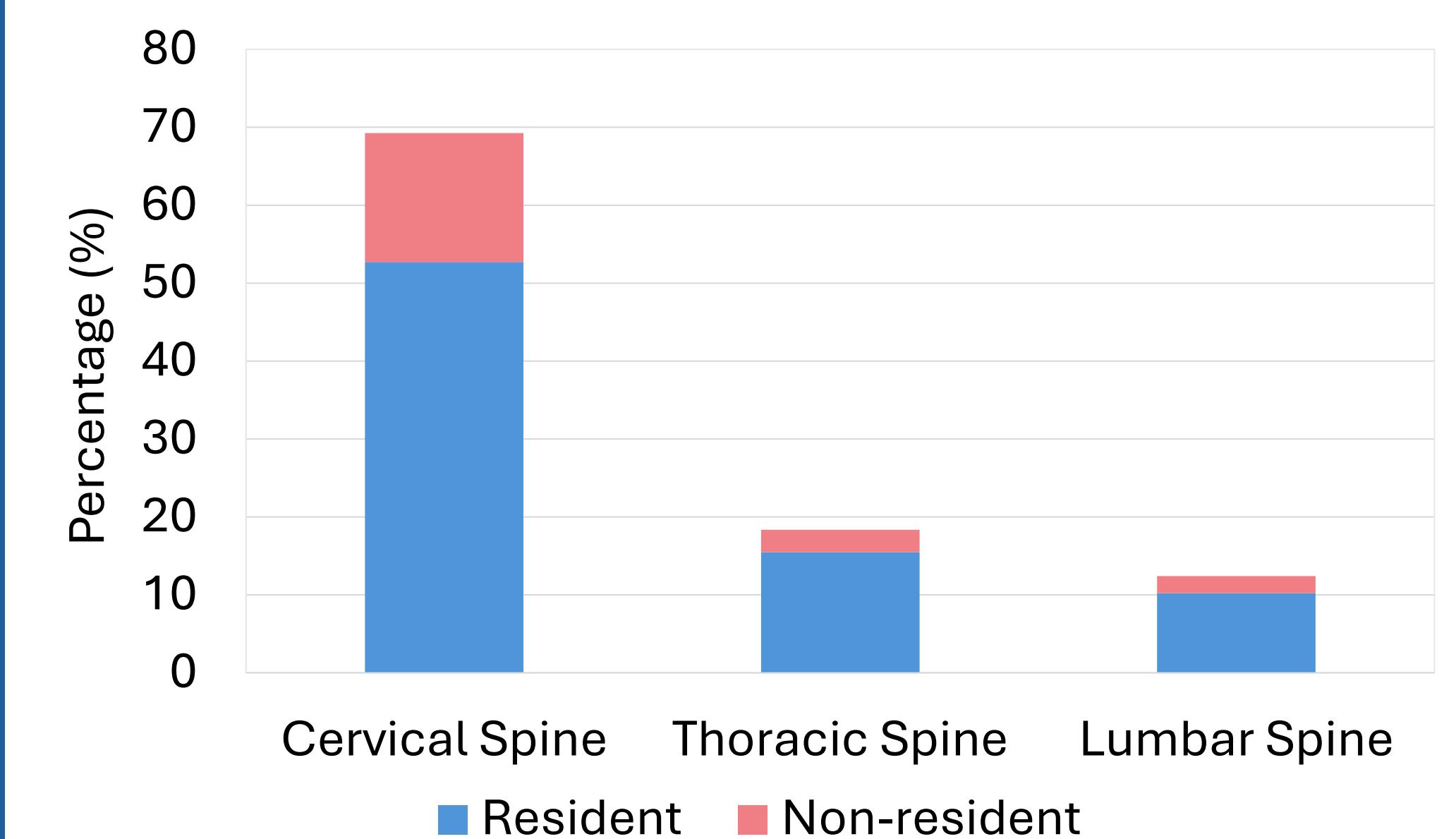


Figure 6. Mechanism of Injury by Race/Ethnicity

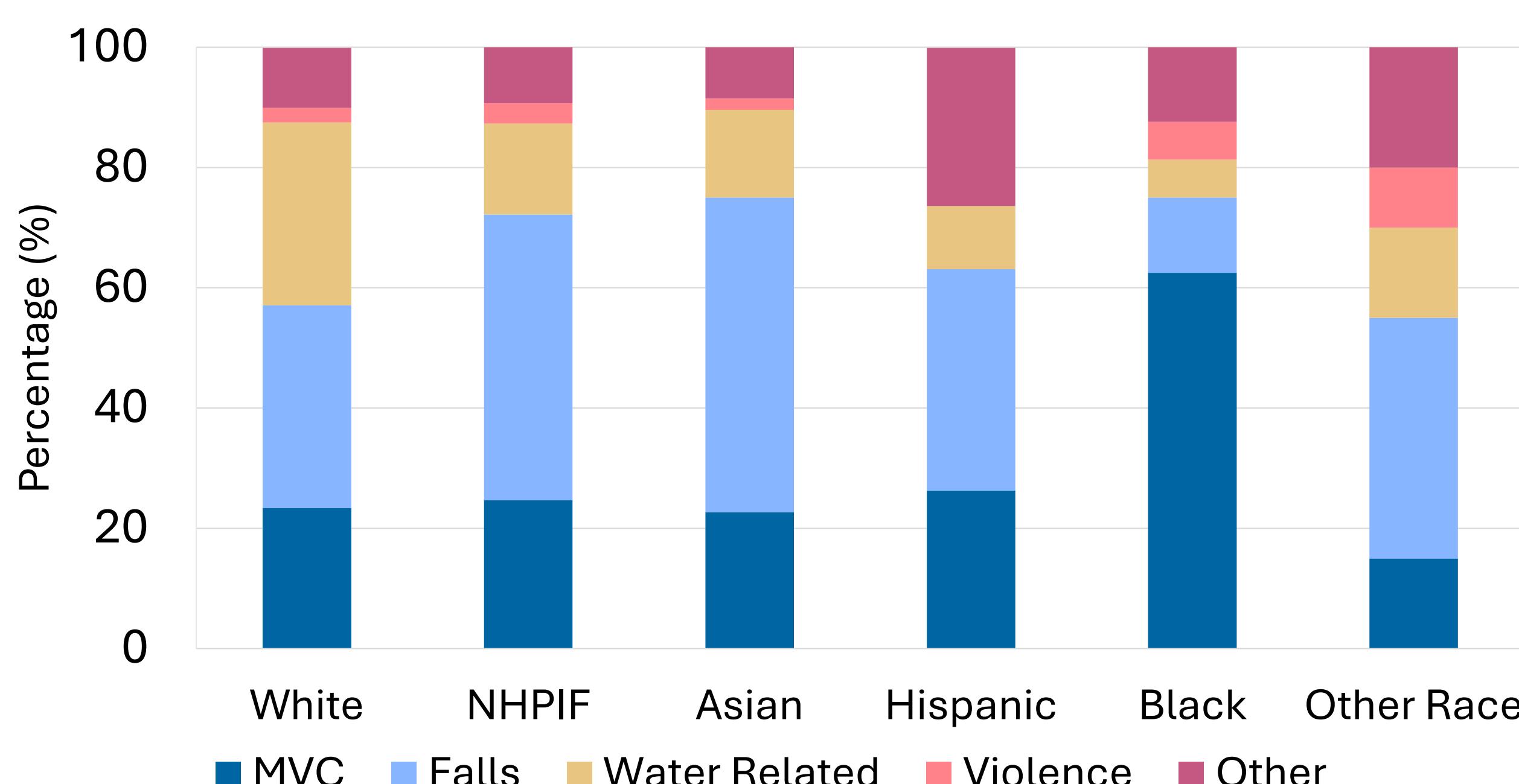
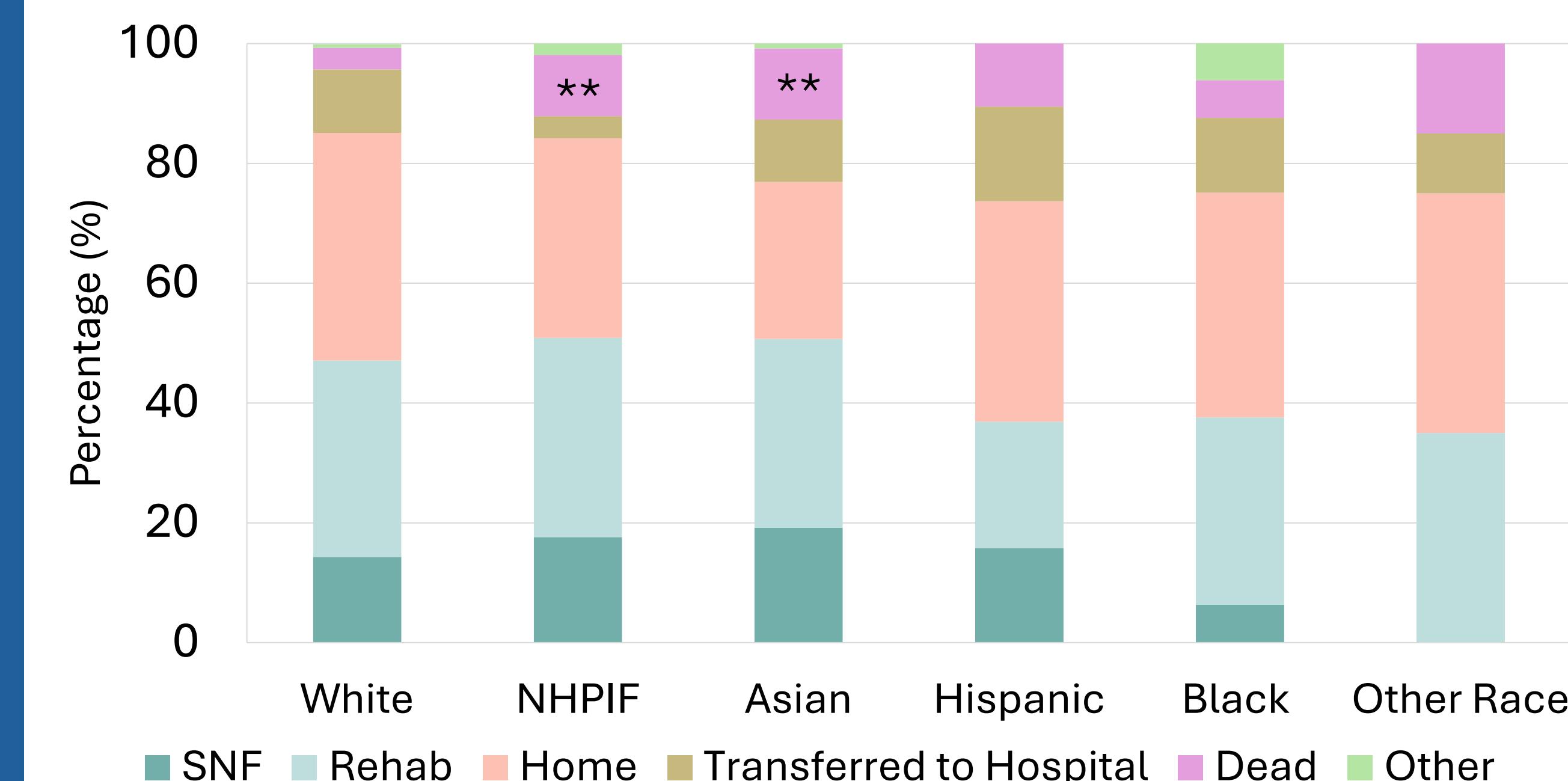


Figure 7. Discharge Outcomes by Race/Ethnicity



Discussion

- This study highlights **substantial differences in demographics and mechanisms** of tSCI in Hawai‘i compared to the U.S mainland
- At QMC, **over 60% of SCI patients were of NHPIF or Asian descent**, far exceeding national averages
- Geographically**, tSCI cases clustered on O‘ahu but occurred statewide, reflecting population and trauma care access.
- NHPIF and Asian patients had a threefold higher risk of in-hospital mortality** than White/Caucasian patients (adjusted OR ≈ 3.1).
- Falls** were the leading cause for all groups; water-related injuries were twice as common in White/Caucasian patients.
- Cervical injuries** were most frequent, reflecting the high clinical needs of Hawai‘i’s SCI population.
- Limitations** include single-center design and no long-term outcomes, but detailed local data and disaggregation by ethnicity strengthen these findings.

Conclusion/Next Steps

Our findings highlight the urgent need for culturally informed SCI prevention and care strategies in Hawai‘i, especially for NHPIF and Asian populations. Future research should examine post-discharge outcomes, the impact of insurance and inter-island transfer, and explore strategies to address these disparities.

Acknowledgements

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