



Perfect Storm? COVID-19, area deprivation, and their association with pediatric trauma

Paulo Castro¹, Devon Pace², Julia Gong^{1,3}, Brandon George^{3,4}, Russell McIntire⁵, Charles Paidas^{1,3}, Loren Berman^{1,3}, Rosemary Frasso^{3,4}, Colin Plover^{3,4}

¹Philadelphia College of Osteopathic Medicine, Philadelphia PA

²Nemours A.I. duPont Hospital for Children, Wilmington DE

³Sidney Kimmel Medical College of Thomas Jefferson University, Philadelphia PA

⁴Jefferson College of Population Health of Thomas Jefferson University, Philadelphia PA

⁵Lehigh University, Bethlehem PA

OBJECTIVE & INTRODUCTION

Social determinants of health (SDOH) affect pediatric injury patterns as vulnerable populations are likely to experience more frequent or severe injuries. This study evaluates the association of COVID-19 and area deprivation with pediatric traumatic injuries.

METHODS

4055 patients were assessed relative to the U.S. pandemic declaration date (3/11/2020): pre-COVID (<3/11/2020), early post-COVID (3/11/2020-3/11/2021), and late post-COVID (>3/11/2021). The Area Deprivation Index (ADI) was used as a measurement of SDOH-related risk at a census block tract group level.

Associations between COVID-19, ADI, injury mechanisms, and outcomes (intensive care unit [ICU]/ventilator duration, hospital length of stay, and mortality) were assessed using chi-square for categorical and Spearman's rank correlation for continuous variables.

PEDIATRIC TRAUMA PATTERNS RELATIVE TO COVID-19

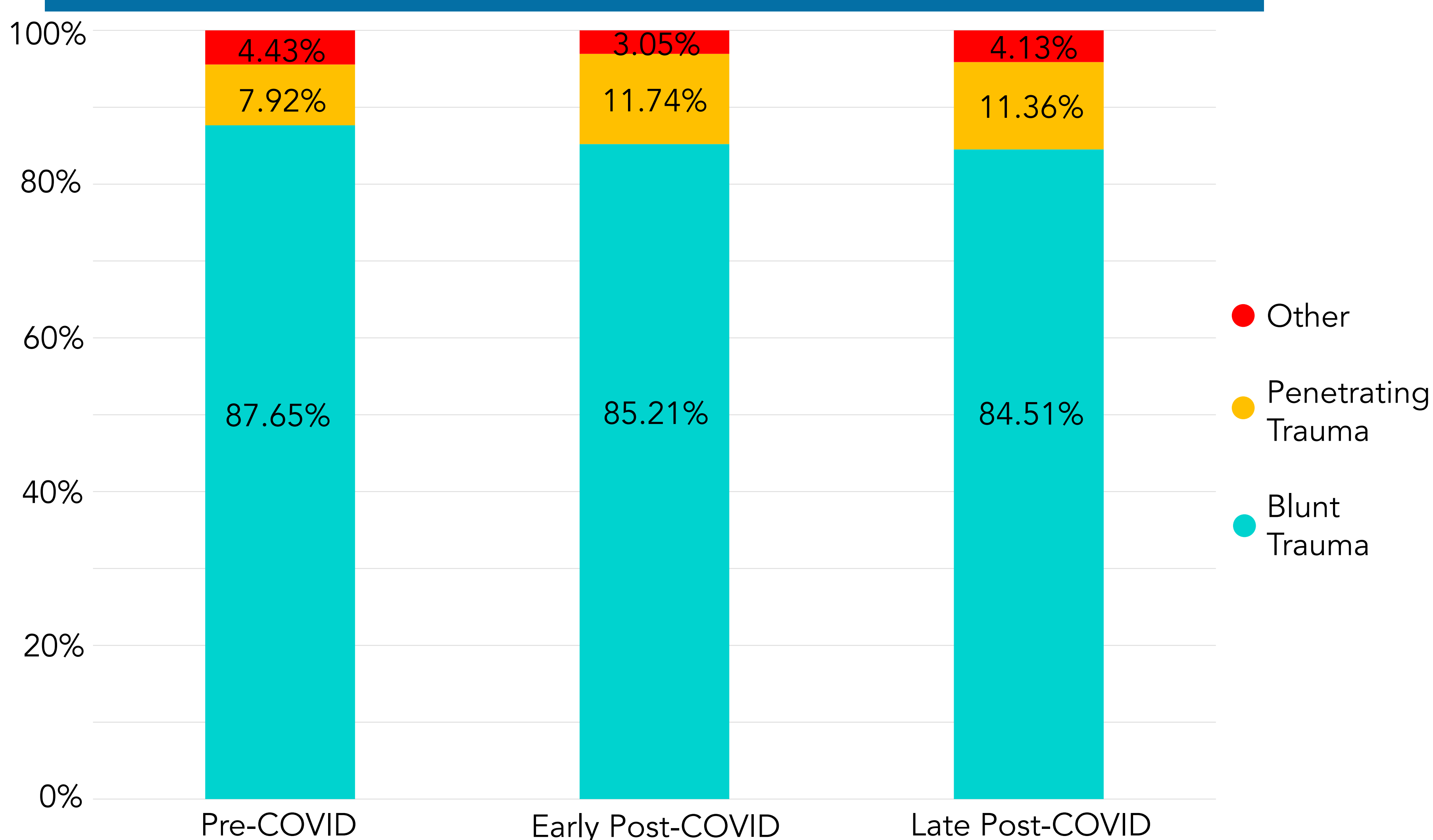


Figure 1: Proportions of injury type relative to COVID-19 pandemic

RESULTS

Variable	Pre-COVID	Early Post-COVID	Late Post-COVID	P-value
ED Admission	1293 (68)	741 (84)	1175 (92)	<0.0001
ICU Stay	110 (8.5)	63 (8.5)	79 (6.7)	0.195
Days on Vent	0 (0-0)	0 (0-0)	0 (0-0)	<0.0001
ICU LOS	0 (0-0)	0 (0-0)	0 (0-0)	<0.0001
Hospital LOS	1 (0-1)	1 (1-1)	1 (1-1)	<0.0001
Mortality	16 (0.8)	7 (0.8)	19 (1.5)	0.161

Table 1: Injury outcomes pre-, early post-, and late post-COVID-19

Variable	Low ADI	High ADI	P-value
ED Admission	1864 (79.8)	1345 (78.2)	0.230
ICU Stay	132 (7.1)	120 (8.9)	0.056
Days on Vent	0 (0-0)	0 (0-0)	0.548
ICU LOS	0 (0-0)	0 (0-0)	0.057
Hospital LOS	1 (1-1)	1 (1-1)	0.253
Mortality	19 (0.8)	23 (1.3)	0.103

Table 2: Injury outcomes by area deprivation index (ADI)

INJURY MECHANISMS

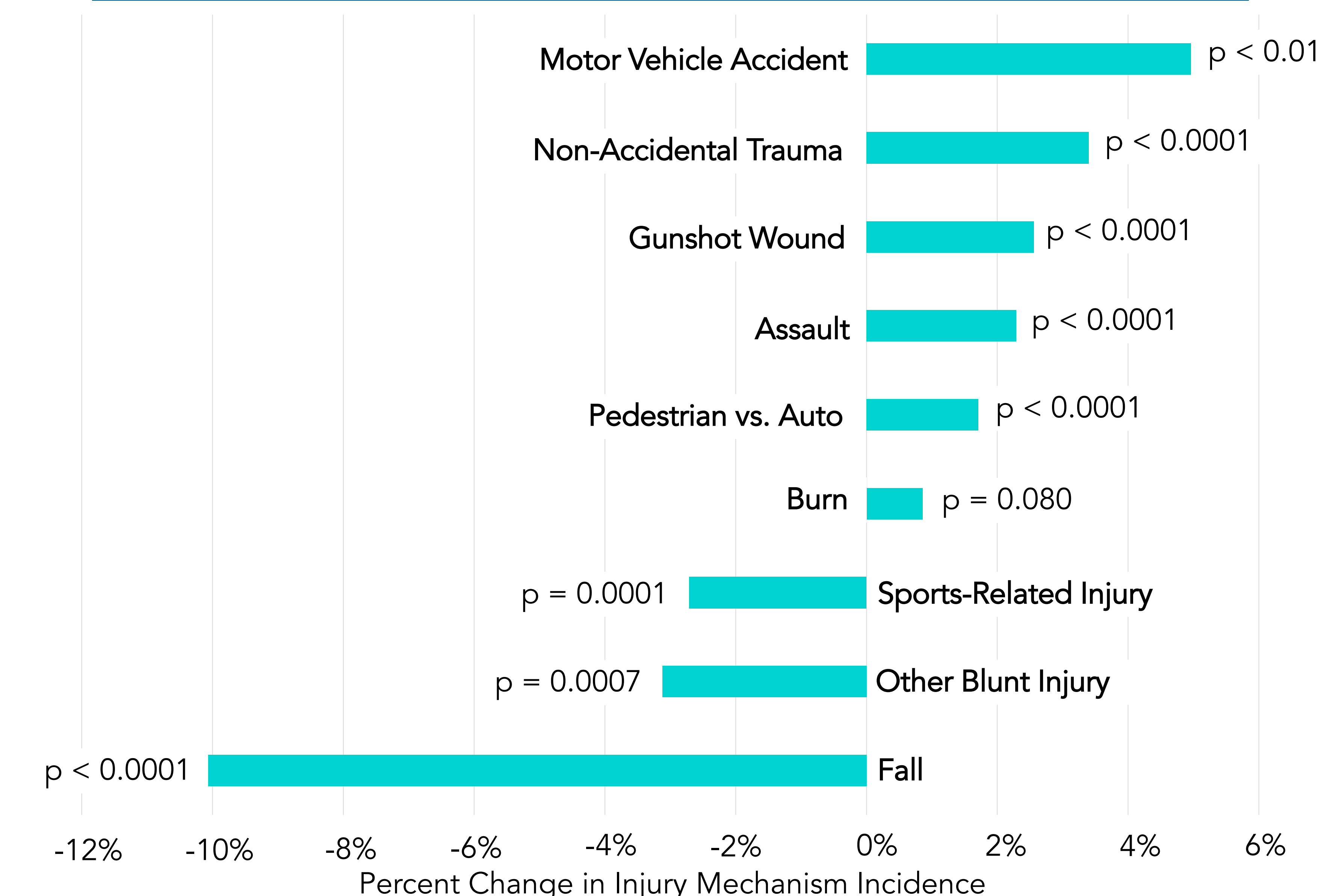


Figure 2: Difference in injuries between high and low ADI groups

CONCLUSION

Children with vulnerable SDOH status appear to have been disproportionately affected by pediatric traumatic injuries following COVID-19. National-level stressors (COVID-19) impact behaviors on a population level and shift exposure risk to different injury mechanisms. Multi-level public health initiatives are needed to address disparate injury patterns based on SDOH exposure.

REFERENCES

None

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