Gravity and Society: Geriatric Fall Recidivism and the Social Deprivation Index

Joseph C. L'Huillier, MD, MS-HPEd; Joseph D. Boccardo, MA; Ajay A. Myneni, MBBS, PhD, MPH; Katia Noyes, PhD; Jihnhee Yu, PhD; Weidun A Guo, MD, PhD, FACS

Introduction

Geriatric Falls
- 1 in 4 geriatric adults fall each year
- 40% of falls require medical treatment
- >$3 billion in yearly costs to NY State (NYS)

Social Deprivation Index (SDI)
- Measure of community health
- SDI impacts trauma outcomes

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Hypothesis
- Patients living in areas of worse SDI will experience more fall recidivism in NYS

Methods

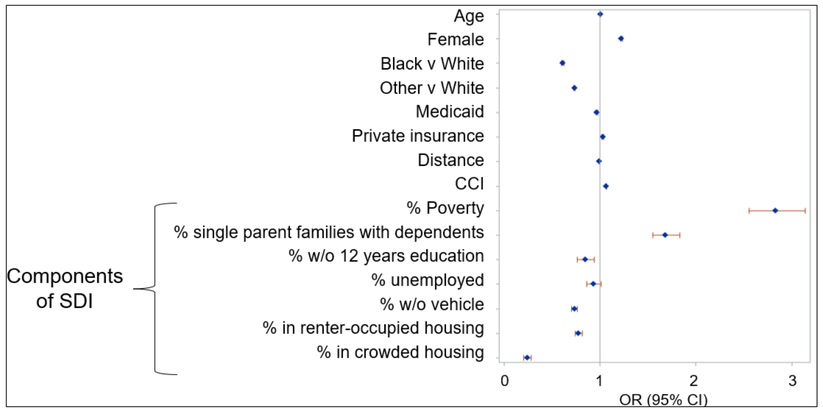
Inclusion
- NYS all-payer database (SPARCS) for years 2005-2020
- Age ≥ 65 years
- ED visit +/- inpatient admission
- Survival to discharge

NEW YORK STATE Department of Health

Analysis
- Stratification: One fall vs >one fall (recidivism)
- Differences in characteristics and environmental factors, regression model
- T-testing (cont) and chi-square (cat), $p < 0.05$

Results

	Single Fall N=1,169,936 (74.5)	Multiple Falls N=409,659 (25.5)	*p*-value
Age at Fall [Mean (SD)]	78.5 (8.8)	79.8 (8.4)	<.01
Female Gender, %	763,466 (65.3)	283,318 (69.2)	<.01
White Race, %	875,046 (74.8)	336,640 (82.2)	<.01
Mild CCI (0-2)	188,002 (16.1)	40,787 (10.0)	<.01
Moderate CCI (3-4) Moderate	771,942 (66.0)	262,162 (64.0)	<.01
High CCI (5+)	209,992 (17.9)	106,710 (26.0)	<.01
SDI Percentile Score [0-100]	52.9 (31.3)	49.4 (30.8)	<.01
% Poverty	.130 (.09)	.123 (.09)	<.01
% Single Parent Family	.129 (.08)	.123 (.09)	<.01
% Education	.121 (.08)	.113 (.08)	<.01
% Not Employed	.293 (.07)	.290 (.07)	<.01
% No Vehicle	.246 (.25)	.212 (.23)	<.01
% HH Renter Occupied	.418 (.24)	.387 (.23)	<.01
% HH Crowding	.046 (.05)	.039 (.05)	<.01



Above: Differences in demographics and SDI metrics between those who suffered one fall vs multiple falls

Left: Forest plot of a logistic regression model for suffering fall recidivism. Older age, female gender, private insurance, higher CCI, and certain SDI components (% poverty, % single parent families with dependents) were associated with increased risk of recidivism.

Discussion

- Demographic and environmental factors do impact geriatric fall recidivism
- Recidivism was associated with White race, a higher Charlson comorbidity index, and better/lower SDI
- Patients of color and those living in areas with worse/higher SDI may not be able to seek care for additional falls.
- Limitations
  - Included only patients who were seen at a hospital. Thus, we analyzed patients with fall recidivism who also sought care.
  - Administrative dataset
  - Only falls from 2005-2020 are captured
  - SDI was analyzed at the ZIP code level

Conclusion

- Social factors including SDI should be considered in the risk assessment for seeking care for fall recurrence upon index admission.

University at Buffalo The State University of New York

Questions/Comments: josephlh@buffalo.edu