

Distal radius fracture presentations during wartime: a retrospective interrupted time-series analysis

Ofir Vinograd¹, Erez Avisar^{1, 2}, Jonathan Persitz³, Ahmad Essa¹, Adi Vinograd^{4, 5}, Orna Tal^{6, 7, 8}

¹Department of Orthopaedic Surgery, Shamir Medical Centre, Israel; ²Hand Surgery Unit, Shamir Medical Centre; ³University Health Network, University of Toronto, Canada; ⁴Israel Center for Disease Control, Ministry of Health, Israel; ⁵School of Public Health, Tel Aviv University; ⁶ICET, Shamir Medical Centre; ⁷Bar Ilan University.

KEY MESSAGE

The acute phase of wartime was associated with an age-divergent shift in hospital-based distal radius fracture (DRF) presentations: lower rates below age 65, but a >2-fold increase among older adults (age interaction $P < 0.001$).

Background

DRF are common injuries with a substantial health-system burden.

Acute wartime may disrupt mobility, healthcare-seeking behavior and fall risk.

Aim

Evaluating age-specific changes in hospital-based DRF during the early-war period.

Methods

- Retrospective interrupted time-series study
- Setting:** a public medical center in Israel
- Study period:** Jan 1, 2012, to Dec 31, 2024.
- Exposure window:** Oct 7 to Nov 10, 2023, first 5 weeks of the Swords of Iron War
- Comparison:** early-war period vs remainder
- Sensitivity:** pooled calendar-matched 5-week comparator in 2022 and 2024.
- Weekly Poisson ITS models estimated adjusted IRRs
- Effect modification by age was tested

Results

Study population

13,108 cases

DRF episodes,
2012-2024

Early-war period

99 cases

DRF episodes

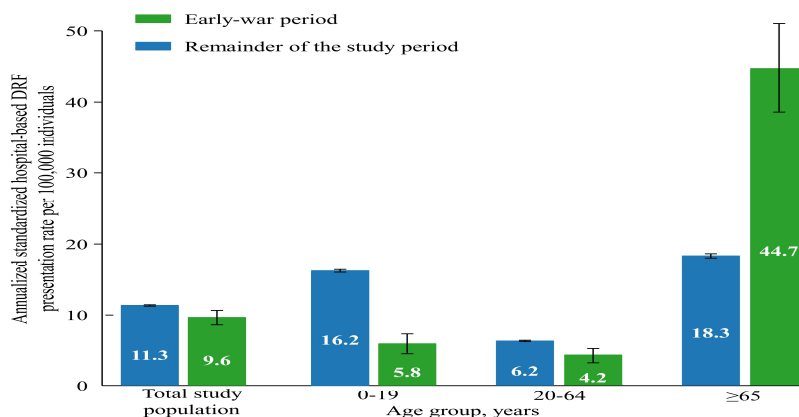
59.6%

aged ≥ 65 years

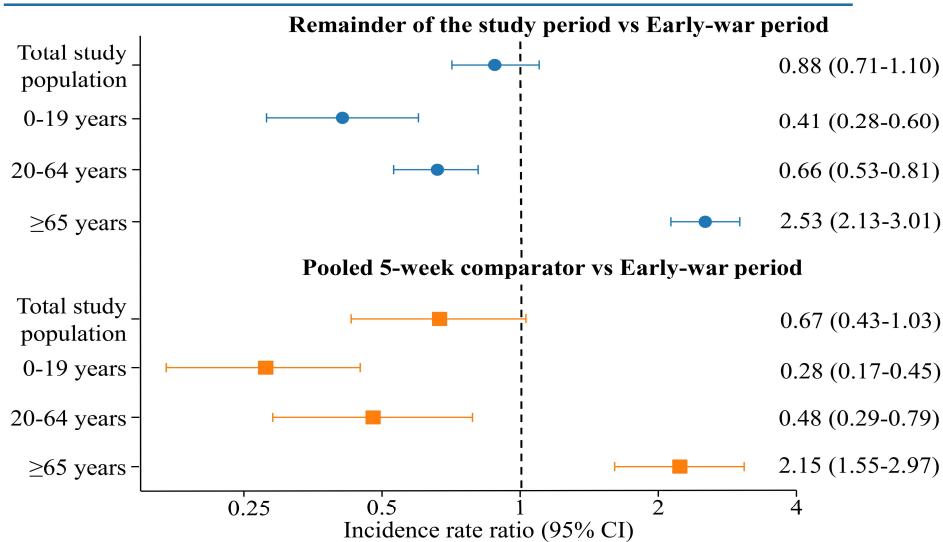
40.4%

aged < 65 years

Patients presenting during the early-war period were older and more often female than those presenting during the remainder of follow-up.



Age-specific relative changes during the early-war period



Interpretation

- Overall DRFs volume did not change.
- Reduced DRFs among children and working-age adults** may reflect reduced mobility, school closures, curtailed outdoor activity and altered healthcare use.
- Increased DRFs among adults aged ≥ 65 years** may reflect heightened fall risk during urgent movement to protected spaces, nighttime alarms and disrupted routines.

IRR from the primary Poisson ITS model and prespecified pooled 5-week calendar comparator model.

Conclusion: Acute wartime disruption was associated with a clear age-dependent shift in DRF presentations, with lower rates below age 65 and higher rates among older adults - supporting age-targeted emergency preparedness and fall-prevention strategies.

Contact:
ofirvin@gmail.com