

ABSTRACT

Introduction:

Trauma is a leading global cause of death, with South Africa's rates eight times the global average due to interpersonal violence and penetrating injuries. Major traumatic conditions are time-sensitive; thus, accurate determination of injury time is important for clinical care, quality improvement, and system-improvement research. This study aims to compare the validity of three approaches for estimating injury times: patient-reported, initial encounter with the health system, and research staff extrapolated times.

Methods:

This prospective quantitative study was a sub-analysis of the "Epidemiology and Outcomes of Prolonged Trauma Care (EpiC)" cohort. From July to August 2023, EpiC-eligible patients were interviewed for patient-reported injury times. Patients' time of initial health system encounter and research staff extrapolated time of injury were obtained from EpiC. We estimated validity coefficients (VC) between these three proxy injury times and true (unknown) injury time using the method of triads.

Results:

Of 123 patients interviewed, 66 had all three proxy measures of injury time and met inclusion criteria. Median age was 31.0 years; 83.3% were male, and 45.5% sustained penetrating trauma. The highest VC, which reflects the correlation between proxy measurements and true injury time, was for research staff injury time (VC=0.99 95%CI 0.96-1.05) followed by initial encounter (VC=0.94, 95%CI 0.85-0.99) with the smallest VC for patient-reported injury time (VC=0.80, 95%CI 0.63-0.95).

Conclusions:

Research staff injury times demonstrated greater validity to true injury times compared with patient-reported times and performed slightly better than initial encounter time. Further validation in larger cohorts is recommended.