MINISTRY OF HEALTH MALAYSIA
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Trauma-Related In-Hospital Mortality (Road Traffic Crash, Burns, and Drowning): Pattern Analysis and Victim Profile (2016–2025)

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Introduction

Road traffic crashes (RTC), hanging, burns, and drowning represent critical trauma categories with significant public health implications. Analysing mortality patterns and victim profiles from hospital records enables evidence-based intervention and injury prevention policy development.

Objective

This study aimed to describe the demographic and temporal distribution of trauma-related deaths and to diagnose associations between victim profile and type and location of death.

Methodology

Retrospective cross-sectional study was conducted on 2,694 hospital mortality records (2016–2025). Trauma cases were extracted (n = 405). Data were analysed using IBM SPSS Statistics via descriptive statistics, frequency analysis, cross-tabulation, and Pearson Chi-Square test ($p < 0.05$).

Results

Trauma deaths constituted 15.0% of total hospital mortality. Mean age was 37.4 years (SD = 18.8), with age 18–39 years) as the predominant group (53.4%). Males represented 82.7% (n = 335). RTC was the leading cause (71.11%), followed by hanging (5.2%). Drowning and burns accounted for 2.5% and 1.7% respectively. The majority died out-of-facility (76.0%). Cross-tabulation revealed significant associations between gender and trauma subtype (χ^2 = 38.4, $p < 0.001$), with males dominating RTC (84.4%) and drowning (90%) fatalities. Annual deaths declined during 2020–2022 before rising to 60 cases in 2025.

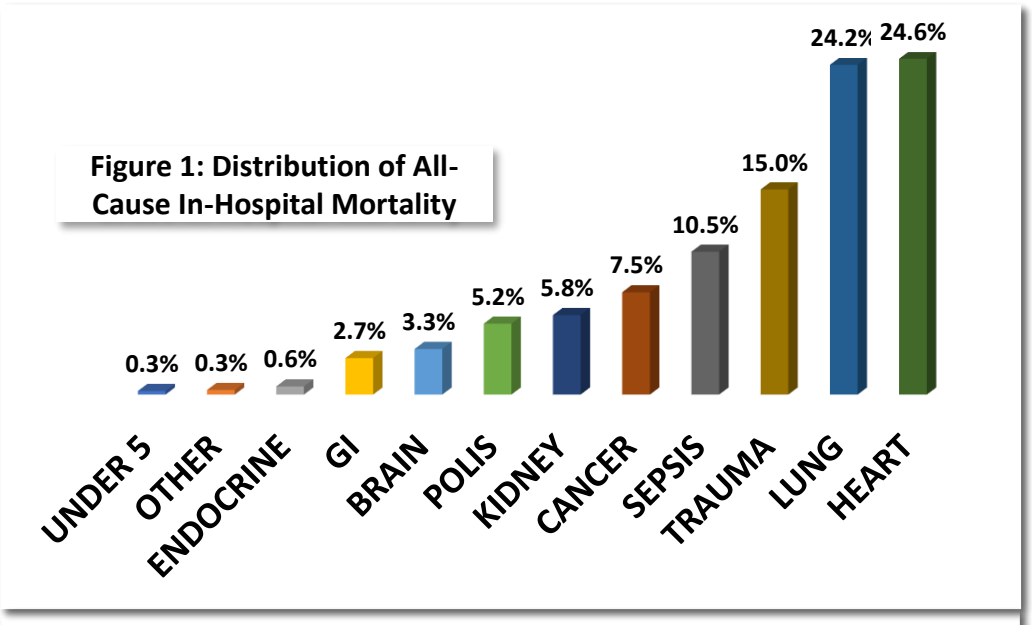


Figure 1: Distribution of All-Cause In-Hospital Mortality

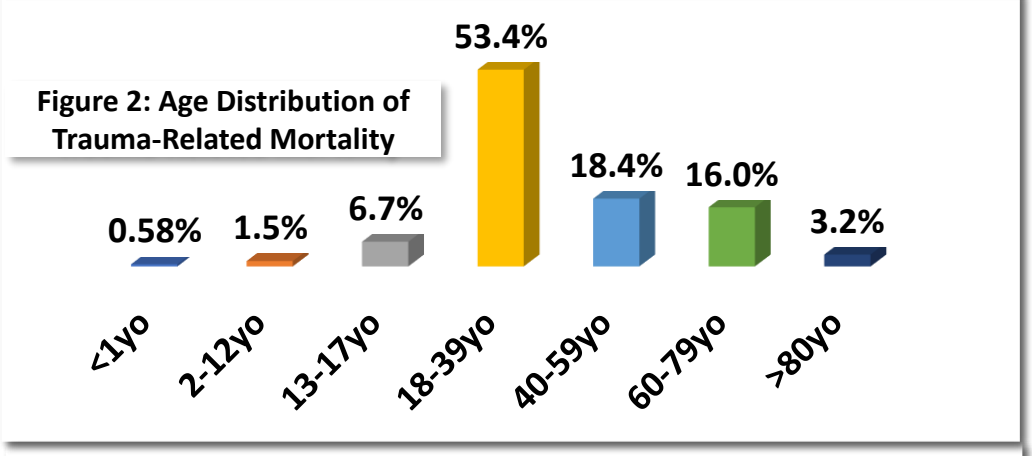


Figure 2: Age Distribution of Trauma-Related Mortality

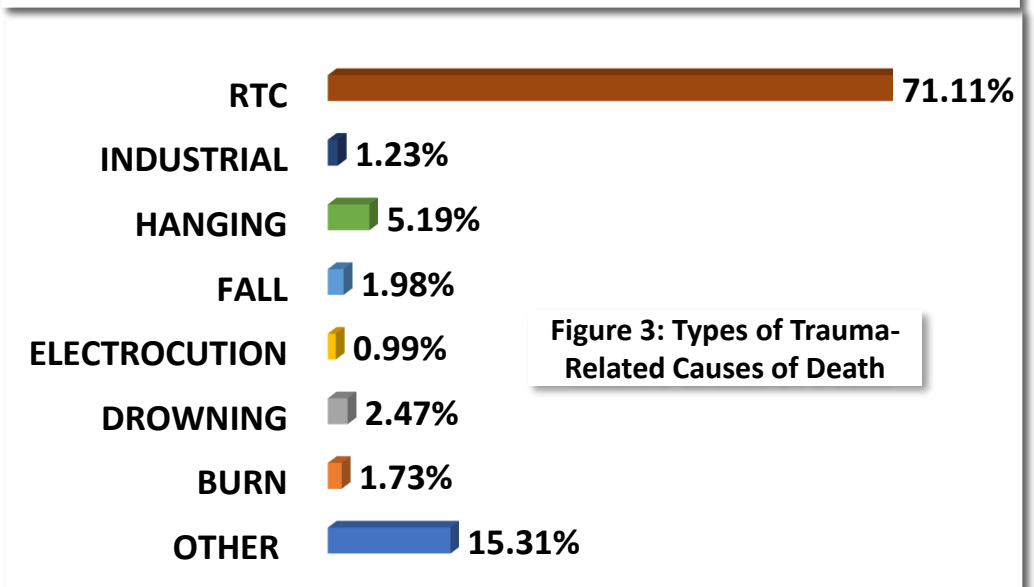


Figure 3: Types of Trauma-Related Causes of Death

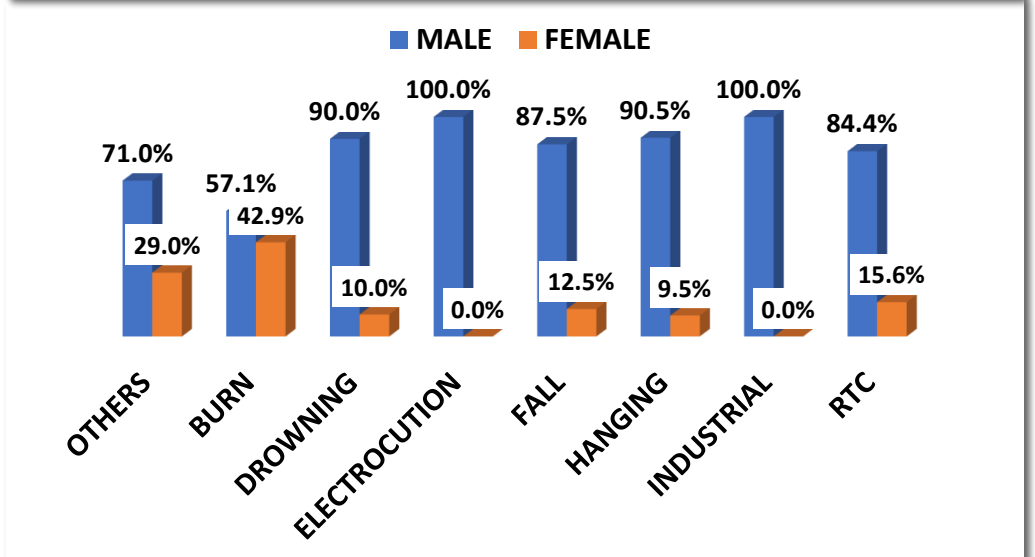


Figure 4: Trauma-Related Causes of Death by Gender

Discussion & Conclusions

Trauma mortality disproportionately affects young adult males, predominantly through RTC. The high out-of-facility death rate underscores critical gaps in pre-hospital emergency response and highlights the urgent need for targeted road safety campaigns and injury prevention programmes among high-risk populations.

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