Estimating drowning deaths in Northern Iran using capture-recapture method

Kiakalayeh AD, Mohammadi R, Stark Ekman D, Yousefzade-Chabok S, Behboudi F, Jansson B.

Source

Division of Social Medicine, Department of Public Health Science, Karolinska Institutet, Norrbacka, Stockholm, Sweden. ali.davoudi.kiakalayeh@ki.se

Abstract

BACKGROUND:

Descriptive epidemiological study has shown that drowning is a problem health in low and middle income countries. To analyze records of drowning deaths from two injury registry systems, to ascertain a true estimate of drowning-mortality, it can help to follow up drowning prevention policy.

METHODS:

This study uses capture-recapture methods to arrive at a more accurate estimate of the number of drowning events occurring over a one-year period in Guilan and Mazandran Provinces, in northern Iran. Records from the Iran's Forensic Medical System and Death Registry System were compared, using five matching approaches based on various combinations of the following variables: gender, place of drowning, date of death, victim age, name, region of residence, and/or place of residence.

RESULTS:

The results revealed that the estimated number of drowning cases in the study population is much higher than official figures, ranging from 5.26 to 8.25 per 100,000 residents compared to the national figure of 4.5 per 100,000. The completeness of Death Registry System records for drowning was 70% of corrected estimates while the completeness of records from Forensic Medicine was 54.4%.

CONCLUSION:

We conclude that the use of capture-recapture methodology may provide better accuracy in measuring drowning events. This method may also help reduce bias in the estimate of incidence rates and comparison of different populations.