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## Young Child Homicide and Accidental Death Rates in the United States, 1940-2005: Classification Issues in Mutually Exclusive Events

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### ABSTRACT

Events that are mutually exclusive, collectively exhaustive, and have a constant sum must be negatively correlated. This study examined whether non-motor vehicle accidental deaths and homicides in young US children displayed a period of time when this rule governing mutually exclusive events was applicable. Homicide and non-motor vehicle accident mortality rates in boys and girls, aged 1 to 4 years old, in the United States from 1940 to 2005 were analyzed. Homicide mortality rates increased sharply in young boys when the accident mortality rate dropped to about 25/100,000; and in young girls, when the accident mortality dropped to about 18/100,000. This increase in child homicide mortality rates corresponded to a time period when the sum of homicide rates and non-motor vehicle accident rates in these children were relatively constant, making these rates of unnatural deaths mutually exclusive, collectively exhaustive, and having a nearly constant sum. Homicide rates in young US children were relatively stable both before and after this critical constant sum time period. These findings suggest that the increase in homicide rates in young US children appear to have reflected the necessary negative correlation between mutually exclusive, collectively exhaustive, and constant sum events, rather than an actual increase in societal violence directed against young children.

### KEYWORDS

Accidental Death Rates; Child; Classification; Homicide Rates; Mutually Exclusive Events

### Cite this paper

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