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ASSOCIATION BETWEEN SWIMMING LESSONS, URBANISATION, AND DROWNING IN TAIWAN

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Background Unintentional drowning remains a leading cause of injury-related death, especially in low- and middle-income countries (LMIC). In 2004, approximately 388 000 people died from drowning, of which 96% occurred in LMIC. In 2001, the Taipei city government launched a school-based swimming programme aimed to reduce drowning. An evaluation of the impact of the swimming programme provides a better understanding to further prevent this global public health burden.

Research Objectives

1. to examine the impact of a comprehensive school-based swimming programme on drowning;
2. to explore the association between urbanisation and drowning.

Methods (1) Difference in differences (DID) is used to examine the impact of swimming programme on drowning; (2) time-series panel approach is used to assess the association between urbanisation and drowning mortality among 23 jurisdictions from 1980 to 2001.

Results Swimming education was associated with a faster decline in drowning among policy-intervened groups. A 'cross-over' change, of which a policy-targeted group declined faster (from 6.7 to 1.7/100 000) and becomes lower in drowning compared to a non-intervened group (from 5.7 to 3.7/100 000, p value 0.023). Urbanisation was associated with the decline of drowning after controlling for medical services and household disposable income (p value=0.03 in fixed effect, multivariate regression model). Medical service was not associated with the drowning decline in Taiwan.

Significance/Contribution to the Field This study provides empirical evidence supporting a protective effect of a school-based swimming programme. It explained urbanisation as a background influence on drowning in the last few decades before any deliberate intervention was promoted.