

Survival swimming – Effectiveness of SwimSafe in preventing drowning in mid and late childhood

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Introduction

Conclusive evidence of the protective effect of swimming has been lacking in high income countries. Nested case-control studies in surveys done across Asia have shown significant associations between swimming ability and protection against drowning in children four years and older. In order to confirm that the relationship between swimming ability and protection from drowning was a causal relationship, a four year cohort study of a structured survival swimming program known as SwimSafe was undertaken in Bangladesh.

Methods

A cohort study was conducted to compare the protection from drowning conferred by participation in the SwimSafe survival swimming. The survival swimming cohort was made up of children primarily aged 4–12 years old who were graduates of the SwimSafe program in rural Bangladesh. The non-survival swimming cohort was made up of age- and sex-matched children from neighboring villages who were not participants in the SwimSafe program. Death from drowning was compared in both groups using survival analysis techniques.

Results

A total of 81,659 children had been taught survival swimming in the study area who had been followed through September 30, 2010 and whose survival status was known. A cohort of 140,479 non-SwimSafe participants had been followed in the same system and whose survival status was known. Children from this non-SwimSafe cohort were matched on age and sex with SwimSafe graduates and a total of 66,066 children from each cohort were fully matched. The matching cohorts were subjected to Kaplan Meier and Cox Proportional Hazard survival analyses with fatal drowning as the primary outcome. These showed a substantial and statistically significant reduction in relative risk of drowning in SwimSafe children as compared to the matched non-SwimSafe children. Detailed results will be presented at the conference.

Conclusions

Survival swimming, as taught in the SwimSafe survival swimming program with its highly structured and skills-based methodology confers protection from drowning in children who graduate from the SwimSafe program. The duration of protection cannot be inferred from this trial beyond three years at present; however, the epidemiologic evidence from previous research done in Asia strongly suggest protection from survival swimming will last throughout childhood.

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