



Article

# Influence of a Survival Swimming Training Programme on Water Safety Knowledge, Attitudes and Skills: A Randomized Controlled Trial among Young Adults in Sri Lanka

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**Abstract:** Drowning among young adults is high in Sri Lanka. Water safety education is a recommended strategy for drowning prevention but is often overlooked for young adults. This study aimed to evaluate the effectiveness of an adapted educational intervention, “Swim for Safety” on improving water safety knowledge, attitudes and survival swimming skills among undergraduates (19–28 years) in Sri Lanka. This study employed a parallel-group, two-arm randomized controlled trial design. The intervention group ( $n = 78$ ) received a face-to-face, 12-lesson education programme, and the control group ( $n = 78$ ) received a brochure and weekly mobile phone messages for six consecutive weeks. Baseline, post-intervention and three-month follow-up knowledge, attitudes and skills were evaluated. Knowledge and attitudes were assessed using a self-administered questionnaire and skills were evaluated following a skills assessment protocol. In total 116 participants, 60 intervention group and 56 control group, completed the study. At baseline there were no differences between groups in median scores of water safety knowledge, attitudes and survival swimming skills. The intervention group demonstrated statistically significant increases in median water safety knowledge, attitudes and survival swimming skill scores compared with the control group, following the intervention and maintained at three-month follow-up ( $p < 0.05$ ). The adapted Swim for Safety programme significantly improved water safety knowledge, attitudes, and survival swimming skills among young adults in Sri Lanka. Therefore, it is recommended that the Sfs programme be implemented widely to prevent drowning in young adults.

**Keywords:** drowning; water safety knowledge; water safety attitudes; survival swimming skills; water safety education; young adults



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## 1. Introduction

Drowning is a major cause of unintentional injury and a public and global health issue that leads to death and disability [1,2]. An estimated 320,000 people die from drowning annually worldwide, with low and middle-income countries accounting for over 90% of unintentional drowning deaths [2]. However, these figures are underestimated as they do not include deaths caused by flood disasters or water transport incidents [3,4]. Both fatal and non-fatal injuries related to drowning account for high healthcare costs and negative psycho-social and economic impacts on the victim, family, and society [2–6]. In many countries, young adults (18–34 years) are a high-risk group for drowning. Particularly