

11-1-2007

Swimming and Water Safety Education

International Life Saving Federation
president@usla.org

Follow this and additional works at: <https://scholarworks.bgsu.edu/ijare>

[How does access to this work benefit you? Let us know!](#)

Recommended Citation

International Life Saving Federation (2007) "Swimming and Water Safety Education," *International Journal of Aquatic Research and Education*: Vol. 1: No. 4, Article 7.

DOI: <https://doi.org/10.25035/ijare.01.04.07>

Available at: <https://scholarworks.bgsu.edu/ijare/vol1/iss4/7>

This Article is brought to you for free and open access by the Journals at ScholarWorks@BGSU. It has been accepted for inclusion in International Journal of Aquatic Research and Education by an authorized editor of ScholarWorks@BGSU.

EDUCATION

International Journal of Aquatic Research and Education, 2007, 1, 373-377

Position Statement: Swimming and Water Safety Education

International Life Saving Federation

Drowning, defined as death caused by respiratory impairment resulting from immersion in a liquid, is a major public health problem and a leading cause of death and injury worldwide (Van Beeck, Branche, Szpilman, Modell, & Bierens, 2005). The WHO Global Burden of Disease study demonstrated that drowning is one of the most common causes of death (Lopez & Murray, 1998). Drowning occurs at all ages, but over half of all drowning deaths are of children under 15 years of age (McGee, Krug, & Peden 2002).

Although reliable statistics on drowning in less-developed countries are scant, it is believed that over 97% of all drowning episodes worldwide occur in low- and middle-income countries (Peden & McGee, 2003). Research in Asia has shown that in many countries drowning kills more children annually than pertussis, measles, diphtheria, plague, cholera, dengue fever, and typhoid combined and is the leading cause of death in children after infancy (UNICEF & TASC, 2004).

The great disparity in the incidence of drowning between low- and middle-income countries compared with high-income countries reflects two main differences, one of which is the different degree of exposure to water. Whereas in high-income countries water exposure commonly occurs in the context of recreation, in many low- and middle-income countries exposure can be an everyday part of the routine of daily life. Another difference relates to preventive action. Successful preventive strategies, commonly used in fully developed countries and some less-developed countries, demonstrate that it is entirely possible to protect against drowning, dramatically reducing the incidence of death from this cause. Commonly accepted methods include providing instruction in water safety and swimming skills, minimizing exposure to risk by use of barriers, making personal floatation devices and rescue devices available, providing lifeguards in areas where people gather for recreational swimming, and regulating water transit and other boating. High-income countries were once where low- and middle-income countries are now. For example, in 1900 the annual incidence of drowning in the Netherlands was 14.4/100,000, but by 2000 it had decreased 24-fold to 0.6/100,000 (Bierens, 1996).

Currently, the difference in drowning rates between higher and lower income countries is as much as 50-fold, evidence of the effectiveness of preventive efforts in high-income countries. It is a powerful demonstration of the effectiveness of targeting drowning as a major public health problem. Clearly, with adequate attention and effort, drowning is a largely preventable cause of death (Branche & Van Beeck, 2003).

The International Life Saving Federation (www.ilsf.org) is the global confederation of national nonprofit lifesaving organizations.

Research has shown different risk factors for different demographic groups. One of these is gender. Males generally have higher drowning rates than females, with the difference typically attributed to greater exposure to water (through occupation and sport), higher rates of alcohol use (a factor in many countries), and higher rates of risk-taking behavior (World Health Organization, 2003). Risk factors also differ by age group. Children under 4 years of age run the highest risk of drowning, primarily because of lack of adequate adult supervision. Ironically, in high-income countries the more common presence of home swimming pools greatly increases the risk of drowning in this age group. For older children and adults, risk factors differ by activity. During recreation, common in high-income countries, risk factors include lack of use of personal flotation devices, use of alcohol, recreation at unprotected bodies of water, and exceeding one's swimming ability (Gilchrist, Gotsch, & Ryan, 2004). In low- and middle-income countries common risk factors for older children and adults are water-transportation mishaps; sudden, unanticipated falls into water; and lack of swimming ability (Kobusingye, 2005).

Research in low- and middle-income countries in Asia has shown that young children have the highest risk of drowning, most commonly while alone or playing with peers of similar age. In these cases, adults are almost never present, nor is anyone who is knowledgeable and skilled in rescue or resuscitation (UNICEF/TASC, 2005). This illustrates the realities of drowning prevention in low- and middle-income countries. Children must be trained to avoid hazardous water activity and to save themselves or their peers when faced with the possibility of drowning. To achieve this, the public health approach requires that as many children as possible be taught the necessary knowledge and skills (Rahman, Rahman, Shafinaz, & Linnan, 2005).

Recent research has shown that during major natural disasters such as tsunamis, vulnerable populations such as older women and children are more at risk (Doocy et al., 2007).

Swimming and Water Safety From a Global Perspective

At the 2002 World Congress on Drowning, the assembled experts estimated that over 80% of all drowning episodes can be prevented, and prevention is the key management intervention. Because risk factors differ by age group, prevention efforts will differ. Reducing infant and young-child drowning episodes requires education of parents and carers on the importance of eliminating access to water hazards, both indoors and out, and constant visual supervision by responsible adults. This can also include social-responsibility enhancement by education or statutory regulation (Nixon, Pearn, Wilkey, & Corcora, 1986). Preventing drowning in older children and adults depends on their possessing knowledge about the hazards and risks inherent in aquatic activity and acquiring skills for survival in these environments (basic swimming skills), both for themselves and to rescue others.

Experience in high-income countries has mainly been with formal training in water safety knowledge and skills in recreational settings, often in concert with competitive swimming and other aquatic sports (Centers for Disease Control and Prevention, 1998). As a result, most high-income countries have well-developed physical infrastructures (such as supervised pools and aquatic recreation areas),

institutional infrastructure (such as swimming clubs and lifesaving organizations), and human infrastructure (such as on-duty lifeguards and qualified trainers with a wide range of competencies). Experience has shown that measures such as these, along with the widespread adoption of formal swimming training for children, have resulted in a remarkable reduction in drowning rates. The United States Lifesaving Association, for example, has demonstrated that the chance of drowning at a natural body of water when trained lifeguards are on duty is only 1 in 18 million (U.S. Lifesaving Association, 2006). The estimated 3% of drowning episodes that occur in high-income countries represent both a remarkable public health achievement and a successful approach to the problem of drowning. Even at these low rates, however, in the context of the relatively high overall safety typical of high-income countries, drowning remains a proportionately large public health burden when contrasted with other causes of death. Indeed, it is often one of the leading causes of child and young-adult deaths in these countries (World Health Organization, 2003). As such, redoubled efforts to increase the implementation of preventive measures are clearly necessary (Accident Compensation Corporation et al., 2005; Lifesaving Society Canada, 2000; Royal Life Saving Society Australia, 2000).

Because 97% of all drowning episodes occur in countries with more limited financial, institutional, or human resources, drowning prevention in these resource-poor settings will require recognition of limitations and adaptation of the successful strategies of higher income countries. Research from Bangladesh, one of the poorest countries in the world but one with a culture of water safety, has shown that educating mothers to eliminate water hazards in and near the house, to supervise very young children carefully, and to teach children to swim at a basic level of skill early in life leads to significant and sustained decreases in drowning rates (Centre for Injury Prevention and Research, Bangladesh, 2004). Evidence is rapidly accumulating that a basic level of water safety knowledge, coupled with a basic level of swimming skill (often called survival swimming), is sufficient to prevent most drowning episodes (Centre for Injury Prevention and Research/UNICEF, 2006).

To be successful, global drowning-prevention efforts must allow for differences between countries with differing income levels. Although many of the measures successfully employed in high-income countries could be successful in other countries, social realities require tailoring of preventive measures to the circumstances and causes of drowning. A more basic and resource-sparing approach in low- and middle-income countries will, generally, be needed, with a focus on key target groups such as parents and carers for infants and young children. These groups should be taught the basics of water safety and the importance of their children learning to swim as early in life as possible. Coupled with efforts to help these countries develop the same effective institutions and professionals as are typical in high-income countries, the result should be a gradual but steady decline in the incidence of drowning over time, as has been the experience in high-income countries (UNICEF Bangladesh 2005).

Note that the terms *high-income*, *middle-income*, and *low-income* are used here as defined by the Organisation for Economic Co-Operation and Development to describe countries at varying levels of development. These terms relate to average incomes and must be taken in the context that there are very low-income individuals in high-income countries, as well as very high-income individuals in low-income countries. Thus, certain strategies for low-income countries might be valuable for specific populations in high-income countries and vice versa.

Recommendations

- Death by drowning is a leading public health problem in all countries. Prevention requires public and government support.
- The vast majority of deaths by drowning can be prevented.
- Everyone, ideally commencing at a young age and regardless of ability and background, should have access to training in water safety, personal survival, and water rescue.
- Knowledge and understanding of water environments and their associated hazards should be taught to everyone at the earliest possible age.
- This awareness training should be accompanied by the provision of swimming teaching, in the safest manner possible and to at least a basic level of skill that provides the capacity for survival after unexpected and sudden immersion in water.
- Acquisition of more advanced water safety knowledge and swimming skills, to include water rescue and competitive swimming, should be encouraged because they enhance aquatic safety.
- Water hazards should be reduced wherever possible, particularly where swimming and water safety education take place.
- Trained lifeguards should provide prevention, rescue, and treatment where recreational swimming and water safety education take place.
- Wherever possible, organizations with drowning-prevention expertise based in high-income countries should provide assistance to lower income countries.
- Accessible and affordable training in water safety and swimming skills should ideally be made available for everyone, particularly children, in all countries, to a level consistent with the ILS's international water safety and swimming-education guidelines.

International Life Saving Federation

26, Gemeenteplein

Leuven 3010

Belgium

Tel: +32-16-35-35-00

Fax: +32-16-35-01-02,

E-mail: ilshq@pandora.be

References

Accident Compensation Corporation, New Zealand Recreation Association, Surf Life Saving New Zealand, Royal New Zealand Coastguard, Water Safety New Zealand, WaterSafe Auckland Incorporated, et al. (2005). *New Zealand's drowning prevention strategy: Towards a water safe New Zealand 2005–2015*. Retrieved September 24, 2007, from http://www.acc.co.nz/DIS_EXT_CSMP/groups/external_ip/documents/internet/wim2_063959.pdf

Bierens, J. (1996). *Drowning in the Netherlands—Pathophysiology, epidemiology and clinical studies*. Unpublished doctoral dissertation, University of Utrecht, Utrecht, The Netherlands.

- Branche, C., & van Beeck, E. (2005). The epidemiology of drowning: An overview. In J. Bierens (Ed.), *Handbook on drowning: Prevention, rescue, treatment*. Amsterdam: Springer.
- Centers for Disease Control and Prevention. (1998). *Report on drowning prevention*. Atlanta, GA: Centers for Disease Control, National Center for Injury Prevention and Control.
- Centre for Injury Prevention and Research, Bangladesh. (2004). *Report on Sherpur, Dhaka, Bangladesh*. Bangladesh: Author.
- Centre for Injury Prevention and Research/UNICEF. (2006). *Childhood injury prevention program (PRECISE), Bangladesh*. Retrieved from www.ciprb.org/ciprb_activities.html
- Doocy, S., Rofi, A., Moodie, C., Spring, E., Bradley, S., Burnham, G., & Robinson, C. (2007). Tsunami mortality in Aceh province, Indonesia. *Bulletin of the World Health Organization*, 85(2), 273-278.
- Gilchrist, J., Gotsch, K., & Ryan, G. (2004). Nonfatal and fatal drownings in recreational water settings—US 2001–2002. *Morbidity and Mortality Weekly Report*, 53(21), 447-452.
- Kobusingye, O.C. (2005). The global burden of drowning: Africa. In J. Bierens (Ed.), *Handbook on drowning: Prevention, rescue, treatment*. Amsterdam: Springer.
- Lifesaving Society Canada. (2000). *Position statement: Canadian swim-to-survive standard*. Ottawa, Ontario, Canada: Author.
- Lopez, A.D., & Murray, C.J.L. (1998). The global burden of disease, 1990–2020. *Nature Medicine*, 4, 1241-1243.
- McGee, K., Krug, E., & Peden, M.M. (2002). *Injury: A leading cause of the global burden of disease, 2000*. Geneva, Switzerland: World Health Organization.
- Nixon, J., Pearn, J., Wilkey, I., & Corcora, A. (1986). Fifteen years of child drowning data 1967–1981: Analysis of all fatal cases from the Brisbane Drowning Study and an 11 year study of consecutive near-drowning cases. *Accident Analysis and Prevention*, 18(3), 199-203.
- Peden, M.M., & McGee, K. (2003). The epidemiology of drowning worldwide. *Injury Control and Safety Promotion*, 10(4), 195-199.
- Rahman, A., Rahman, F., Shafinaz, S., & Linnan, M. (2005). *Bangladesh health and injury survey report on children*. MOH&FW, ICMH, UNICEF, TASC, ISBN 92-806-3855-6.
- Royal Life Saving Society Australia. (2000). *RLSSA national swimming and water safety framework*. Sydney, Australia: Author.
- UNICEF & TASC. (2004). *Towards a world safe for children: Proceedings of UNICEF/TASC conference on child injury, Bangkok, Thailand, April 21–22, 2004*. Bangkok, Thailand: UNICEF & TASC.
- UNICEF Bangladesh. (2005). *Children drowning, drowning children: New research has revealed that drowning is the major killer of children over the age of one year*. Dhaka, Bangladesh: UNICEF Bangladesh.
- UNICEF/TASC. (2005). *Global mini consultation on injury prevention in children*. Bangkok, Thailand: UNICEF/TASC.
- United States Lifesaving Association. (2006). *United States Lifesaving Association data 1996–2006*. Retrieved from www.usla.org/Statistics/public.asp
- Van Beeck, E.F., Branche, C.M., Szpilman, D., Modell, J.H., & Bierens, J.J.L.M. (2005). A new definition of drowning: Towards documentation and prevention of a global public health problem. *Bulletin of the World Health Organization*, 83(11), 853-856.
- World Health Organization. (2003). *Facts about injuries—Drowning, injuries and violence prevention*. Geneva, Switzerland: World Health Organization.