

## **Social-demographic, environmental and caring risk factors for childhood drowning deaths in Bangladesh**

### **ABSTRACT**

**Background:** Drowning contributes to incapacity and early death in many countries. In low- and middle-income countries, children are the most susceptible to fatalities. Over 50 % of the global drowning deaths occur among children aged under 15 years old with children aged between 1 and 4 years of age being most at risk. In Bangladesh, drowning rates are 10 to 20 times more than those in other developing countries. The object of this study is to determine the socio-demographic, environmental and caring hazard issues for child drowning in Bangladesh. **Methods:** A case-control study was conducted, with data collected from the Bangladesh Health and Injury Survey (BHIS) to identify the social-demographic and environmental factors associated with childhood drowning. The participants represented 171,366 households from seven divisions of Bangladesh—Dhaka, Rajshahi, Chittagong, Barisal, Sylhet, Khulna and Rangpur. The survey was conducted between January and December of 2003. A total of 141 children drowning were identified in the year preceding the survey. Data were analysed using descriptive statistics and logistic regression analysis. The odds ratios with 95 % CI intervals were estimated for various associated factors for child drowning deaths. **Results:** In Bangladesh, in 2003, the incidence of drowning deaths was 104.8 per 100,000 among those aged less than 5 years; 168.7 per 100,000 in rural areas; male 32.4 per 100,000; 112.7 per 100,000 between 10:00 a.m. and 2:00 p.m.; and cannot swim 134.9 per 100,000. The socio-demographic danger factors for child drowning deaths were: being male (OR = 1.45, 95 % CI = 1.34–1.78), aged less than 5 years (OR = 2.89, 95 % CI = 1.89–3.11), urban areas (OR = 0.67, 95 % CI = 0.67–1.87), and mother being illiterate (OR = 1.69, 95 % CI = 1.01–2.81). Significant environmental and caring factors included mother/caregiver not being the accompanying person (OR = 25.4, 95 % CI = 14.4–45.3) and children cannot swim (OR = 4.5, 95 % CI = 1.25–19.4). **Conclusion:** Drowning is the single largest reason for the mortality of children aged less than five years. There is a need to educate Bangladeshi parents and encourage behavioural change concerning supervision. The Government should use mass media to raise awareness about drowning among the community with a focus on rural areas. Policies should focus on increasing supervision by mothers/care persons, swimming skills, and should target illiterate mothers. Therefore, there is an immediate need for the Bangladeshi Government to address the problem of drowning.

**Keyword:** Social-demographic; Environmental and caring; Risk factors; Drowning; Bangladesh