
Drowning And Near Drowning

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Abstract

Drowning is a significant cause of morbidity and mortality in childhood globally. Children in the developed world are thought to be affected most by this event. However recent figures have shown that drowning contributes significantly to childhood deaths in developing countries. Drowning and near drowning have been redefined recently to reflect the growing interest in this health hazard. This review outlined the variable profile of drowning and near drowning.

Drowning was defined as death caused by suffocation as a result of a liquid interrupting the mechanisms for the extraction of oxygen from air which leads to asphyxia. For a long time, issues pertaining to the appropriate definitions of drowning and near drowning have been debatable. Drowning was redefined recently. This new definition is more inclusive, encompassing and surveillance directing.

An international multidisciplinary expert directed consensus definition, redefines primary drowning as the process of experiencing respiratory insufficiency or difficulty following a submersion or immersion in a body of liquid. In this definition, drowning outcomes were classified as death, morbidity, or no morbidity.

Near drowning was redefined as the survival from a drowning event which involved impaired consciousness or water inhalation for 24 hours or more, it could be followed by secondary complications, including death. Recently added to these definitions is secondary drowning, which could be defined as death due to chemical or biological changes in the lungs after a near drowning event. Drowning is a significant cause of mortality worldwide.

The global mortality rate from drowning is 6.8 per 100 000 person –years. The accurate determination of the true incidences of near drowning and secondary drowning have been difficult, given that many cases are not usually reported. The estimated range is thought to be at least 20 to 50 times the rate of drowning. The global incidence of submersion related deaths is 2.2-3.5/100,000. A third of these cases are children. It is the third most common cause of accidental deaths in children globally [1,2, 3, 4] Given that drowning is a major public health burden, its adequate prevention globally,

will involve activities and policies that address its known risk factors. Even though data on drowning related deaths are under reported worldwide, drowning is still the leading cause of mortality among children in most settings, especially in developing countries [5] Investigating the epidemiology of drowning and near drowning would be invaluable in generating data to assist the development of appropriately targeted educational and preventive strategies.[6] Most drownings occur in water,90% in fresh water (rivers, lakes and pools) 10% in sea water, however drownings in other fluids could also occur. Associated or predisposing risk factors to drowning include;Age related factors such as; Inadequate supervision of young children, being a young adolescent male. erturbations in the characteristics of a body of water which could undermine the swimmers ability; Such as sudden turbulence or an increase in the flow, a body of water which is of a considerable depth, increased intensities of the currents and waves of the body of water. Also drowning or near drowning can follow a submersion event, following an automobile accident or a capsized boat Physical entrapment leading to inability to get out of a submersion event such as; An escape route which has been compromised by physical barriers or hampered by clothing or equipment.Also it could be due to forcible submersions by an older child or a peer during a misguided children's play or attempted infanticide [7]. Impaired judgment from inappropriate use of drugs such as; alcohol, sedatives or hypnotics. Other factors include incapacitations arising from coincidental conditions such as; cold, hypothermia, shock, injury, exhaustion.

Unforeseen adverse health event while swimming such as; Heart attacks, seizures, adverse cerebrovascular and unclassified paroxysmal events.

Other factors include incapacitations arising from coincidental conditions such as; cold, hypothermia, shock, injury, exhaustion. Unforeseen adverse health events while swimming such as; ear attacks, seizures, adverse cerebrovascular and unclassified paroxysmal events.

Other factors that could predispose to near drowning or drowning are impaired perception of the physical characteristics of bodies of water due to;

Playing or swimming in a poorly illuminated body of water.

Swimming pranks induced autonomic dysfunctions such as underwater blackouts following a very rapid breathing in order to extend a breath-hold dive, this is usually commoner in a shallow body of water or a blackout on rapid ascent from a deep breath hold dive due to hypoxia, this is called a deep water blackout.

Children have drowned in very small bodies of water. The primary cause of death in most of these cases is hypoxia and acidosis which leads to cardiac arrest. Deaths associated with accidental drownings occurred more commonly in children, this might be due to the inquisitive behavioral pattern of children generally, children who drown, were usually primarily more intelligent and explorative than their peers.

Anecdotally near drowning and drowning were thought not to be common phenomena in developing countries. However more recent descriptive epidemiological studies have demonstrated that childhood drowning rates are higher in the developing countries and that it is a major public health issue in these settings.^[8,9]

Pediatric drowning is usually propagated by environmental factors such as unfenced swimming pools.^[10, 11, 12], unprotected bodies of fresh water such as ,dams, trenches and drains being close to domestic homes and also the child's characteristics such as age, co-morbidities such as seizure disorders, attention deficit hyperactivity spectrum disorders and defects of self regulation. Infants as a group with a high head mass versus body mass ratio are most at risk in these events. Given that their heads will be more dependent in deeper water, cries and moans will be inaudible as they simply drown. Furthermore they will not have much ability to make attempts to resurface. Unfortunately most bystanders including parents will be unable to undertake any form of resuscitation due to apprehension and lack of adequate skills.

Drowning or near drowning rather than being a single event is usually a constellation of distinct but sequentially linked events.

The clinical features of near drowning cases is a spectrum ranging from aspiration pneumonitis, pulmonary edema, with its associated clinical features such as respiratory distress, metabolic acidosis, acute tubular necrosis, hypothermia, multiple electrolyte derangements, central nervous system dysfunctions such as seizures and coma, fatal arrhythmias, shock syndrome or death. Although ultimate restoration of normal pulmonary function can be expected in survivors, the prognosis for subsequent utmost recovery of neurologic functions will not be as good ,especially in those cases where prolonged cardiopulmonary resuscitations were required, because advances in neurologic resuscitations have lagged behind those in cardiopulmonary resuscitations A third of the children could have the minimal organic brain dysfunction syndrome, 1 in every 20 cases surviving could live in a complete vegetative state. On the average children who survive near drowning generally do well clinically. Ongoing surveillance and investigations in this setting intimates that overall childhood mortality rates have been declining because of several public health interventions, undertaken against infectious diseases, malnutrition and other common childhood problems.

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