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Media, Risk, and Prevention—Lessons for Aquatic Safety From Newsworthy Deaths: Precipice for Prevention or Just Good Tales?

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Drowning is a leading cause of death worldwide. To examine the characteristics of newsworthy aquatic fatalities, we examined aquatic-related fatalities listed as Darwin Award Nominees (2003–2012). The primary objective of our examinations was to review the circumstances surrounding the fatalities. We found twelve fatalities. The majority occurred in the USA ($n = 8$) to persons who were engaged in a recreational activity ($n = 9$) with one or more observers present ($n = 8$). Alcohol was believed to be involved in four cases as was flood water in four others ($n = 4$). We identified multiple possible prevention strategies that were available for all cases. While media is an important conduit for prevention messages, it often focuses on the unusual and lacks any discussion about prevention. While many of the Darwin Awards fatalities were considered unusual, we would argue that many actually were common scenarios such as drowning in flood water, having consumed alcohol then participating in aquatic activity, as well as engaging in other risk-taking behaviors in an aquatic setting.

Keywords: fatal drowning, water safety, drowning prevention, media

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We all like to think we are rational people. We know there are some things you should not do, like putting a knife in the toaster to rescue your burnt toast, but then seconds after performing this activity we think ‘Why did I do that?’ The Darwin Awards are a great source of amusement to those of us who work in health, often thinking ‘How could someone do that?’ This paper explores aquatic deaths identified by the Darwin Awards and asks the questions, ‘What could have been done to prevent these deaths?’ and ‘What can we do to prevent similar future deaths from occurring?’

Traditionally summer sees an increase in aquatic fatalities, predominantly drowning, and is an appropriate time to enact strategies to prevent aquatic deaths from occurring (Mitchell, Williamson, & Olivier, 2010; Royal Life Saving Society—Australia, 2012). The Global Burden of Disease study estimated that 349,100 people died of drowning worldwide in 2010 (Lozano et al., 2012). Drowning is the fourth leading cause of injury and is ranked 21st in the top 25 causes of global years of life lost, following road injury (8th), self-harm (13th), and interpersonal violence (20th). In addition to representing an important global issue, drowning is a leading cause of death among children and young adults aged 15–29 years (Lozano, et al., 2012).

In Australia during the 2011–2012 financial year, there were 284 reported drowning fatalities, a crude drowning rate of 1.27 per 100,000 people, of which 82% were male (Royal Life Saving Society—Australia, 2012). The current Australian Water Safety Strategy 2012–2015 aims to reduce drowning deaths 50% by 2020 through targeting the highest risk age groups, high-risk locations, and focusing on specific challenges including alcohol use (Australian Water Safety Council, 2012). Recent reports suggest that reducing drowning fatalities by 50% is achievable based on current knowledge (Franklin, Scarr, & Pearn, 2010). Reductions in drowning deaths have been, and continue to be, driven by addressing the key determinants of drowning leading to a range of aquatic safety programs such as pool fencing (Pearn, Nixon, Franklin, & Wallis, 2008), learning to swim and water safety skills (Pearn & Franklin, 2009), patrolling of beaches and swimming between the flags (Wilks, de Nardi, & Wodarski, 2007), educational programs (Bugeja & Franklin, 2012), and the use of lifejackets and aquatic signage (Moran, Quan, Franklin, & Bennett, 2011).

While some deaths are inevitable, the media is more likely to report the unusual, morbid, or fascinating ways in which people unintentionally meet their demise (Walter, Littlewood, & Pickering, 1995). For example, in July 2013, a Queensland man died shortly after competing in a chili pie eating contest and this event made the news around Australia, New Zealand, United Kingdom, and New York (Armistead & Crane, 2013; Tedmanson, 2013; Williams, 2013). It wasn’t so much his death, but the circumstances surrounding his death and its extraordinary nature, as suggested by Walter, Littlewood, and Pickering who wrote ‘. . . the public salience of such reported deaths is proportionate to their extraordinary features, and these features are deemed story-worthy because their dramatic immediacy . . .’ (Walter, et al., 1995, p. 583). The extraordinary features in this case were that it was an eating contest, specifically a chili pie eating competition, which occurred during half time of the State of Origin rugby league match, a period during which there normally are fewer presentations to the emergency department (Furyk et al., 2012). The decedent often has been reported to have commented on the heat of the

chili before collapsing (Williams, 2013). It should be noted that the specific cause of death in this case is still under investigation.

What is reported in the media provides insight into what is perceived to be interesting to the general public as *newsworthy*. Normally, they are unique or unusual events (De Semir, 1996). Some deaths draw international attention and often circulate independently of their source or geographic location and become amplified in the process (Vasterman, 2005).

Heuristics, which are mental shortcuts, suggests that people are often biased in their estimations of probability based on how easy it is to recall a relevant example (Kahneman, 2003; Nemire, 2008). An example is pediatric drowning deaths which are common but underestimated compared with less common causes of death such as botulism (Michalsen, 2003). The presentations of fatalities and the terminology used within media can influence perceptions of the likelihood of their reoccurrence or severity (Smith et al., 2012). The language used such as *accident* and *freak event* positions the death as not only being unfortunate and unpreventable but also unlikely to happen to the reader (Smith, et al., 2012). The provision of a clear injury prevention message reported as part of a sensationalized story is often found to be lacking particularly when such terminology is used (Smith, et al., 2012). We hope that by using these cases as examples and by adding a prevention message to them people are more likely to recall the prevention message in the future, helping to more strongly prioritize and advocate for injury prevention (Michalsen, 2003; Pribble et al., 2008).

We present Darwin Awards as examples of newsworthy aquatic deaths to explore possible prevention messages. The use of the Darwin Awards playfully offers some insight into the absurd myriad of ways in which death can occur and hopefully illustrates that a short lapse in judgment in conjunction with the lethal merging of host, environment, and agent can occur regardless of individual traits or indeed intelligence (Haddon, 1973). We further hope that by providing an overview of these unique deaths and linking potential methods to prevent further fatalities, the prevention messages can be emphasized and remembered. Thus, we have reviewed water-related fatalities during the last decade that were designated as Darwin Awards to gather insight into the circumstances of fatalities (2003–2012). Further, we seek to identify what we can learn from a prevention perspective about aquatic deaths identified as Darwin Awards.

Method

Many persons have received e-mails at some stage reporting to be the Darwin Awards for a particular period; however, many of the incidents reported in these emails are fakes, misrepresentations, or exaggerations that don't meet the official criteria for selection. We have used the website (www.darwinawards.com) as the primary source of data for aquatic-related deaths reported in our review.

The criteria for selection as a Darwin Award (i.e., “Rules”) are reported as 1) the death or injury prohibits the ability of the person to (further) reproduce; 2) the circumstances which led to the individual(s) deaths were self-selected; 3) were unintentional (i.e., not suicide); 4) the “candidate suffers an astounding [and uncommon] lapse of judgment;” 5) the candidates must be of sound mental state; and 6) the event must be verifiable by a reputable source (Northcutt, 2013). The awards attempt to apply a retrograde, but popular interpretation of Charles Darwin’s Theory of Evolution, specifically the so called ‘Survival of the Fittest’ principle (a.k.a., natural selection), suggesting that a lack of judgment or some other characteristic has led to them eliminating themselves and/or their genes from the gene pool (Northcutt, 2013; Ruse, 1989).

The confirmed Darwin Awards nominations for the period of 2003–2012 were reviewed ($n = 135$). Confirmed nominations were those that had been verified by the site as being correct through review of media reports. Any confirmed nominations, which reported involvement with water before or at the time of the death, were identified ($n = 23$). A review of the circumstances of the death was considered by two reviewers with events in which water was not related directly to the cause of death were excluded ($n = 7$). Four more nominations were excluded for the following reasons: inability to foresee the chain of events, such as weather conditions that cannot be reasonably predicted by an average person; the cause of death was independent of the source of water although it may have involved water-related equipment (e.g., pool cleaning pole); the circumstances that lead to the actual cause of death were at best presumed given the time lag between time missing and retrieval of body; and the removal of a nomination which could not be independently validated by the reviewers.

Twelve nominations met the criteria for being aquatic-related deaths, which were confirmed (via independent media reports) and occurred between 2003–2012. After reviewing each nomination, the authors proposed context-specific prevention strategies that fit the situation.

Results

Of the 12 aquatic-related deaths the majority of the cases reported were from North America ($n = 8$). Males suffered a majority of fatalities ($n = 7$). Alcohol was suspected or known to be involved in four cases as shown in Table 1.

The majority of the fatalities occurred during recreational activities ($n = 9$) including swimming, diving, canoeing, fishing, and boating. The three fatalities which did not occur during recreational activities involved retrieving an object ($n = 1$) or entering floodwater in a motor vehicle ($n = 2$; Table 1).

In eight cases, the media reported that the victims were not alone in the lead-up to their death. Police presence or warnings/reservations were reported before one fatality. There were four cases where flood waters were involved (Table 1).

Table 1 Darwin Award Nominees Involving Aquatic Deaths

Darwin Title	Year	Country	Age & Gender	Brief Description	Alcohol Involvement	Prevention Strategies
Teaming With Crocodiles ^A	2010	South Africa	27; Female	Celebrating the new year, a group of friends went swimming in a known crocodile- and hippo-infested river. On a third, and final swim of the day, the woman was observed disappearing below the surface. Police sniffer dogs were unable to locate her remains.	Suspected	<ul style="list-style-type: none"> • Personal floatation device [PFD] • Education—locals and tourists of river inhabitants avoid engaging in water-based recreational activities while under the influence of drugs and/or alcohol • Alternative locations in which swimming can occur
Double Dip ^B	2009	United States of America	50; Female	While running some errands on her moped, woman rode into floodwater and was rescued by a policeman. When the policeman left the woman unattended, she re-entered floodwater on foot. Her motivation for re-entering is unknown.	Suspected	<ul style="list-style-type: none"> • Education—floodwater is dangerous; avoid entering water while under the influence of drugs and/or alcohol • Larger police/emergency service presence during flash flood events at known locations where floodwater and road infrastructure are known to intersect • Construction of bridges/other routes around floodwater
Wetting the Bed ^C	2009	United States of America	30; Female	While riding air mattresses on the surging remnants of floodwater with a male companion, a woman disappears. Her remains were found the next day in trees below spillway.	Not	<ul style="list-style-type: none"> • Appropriate equipment including PFD if entering water • Education—floodwater is dangerous; recreational activities and floodwater don't mix

(continued)

Table 1 (continued)

Darwin Title	Year	Country	Age & Gender	Brief Description	Alcohol Involvement	Prevention Strategies
One Foot in the Pool . . . ^D	2008	Indonesia	18; Male	A partially submerged teenager in a backyard pool investigated power box and the internal wires located near pool. Despite resuscitation attempts, died at scene of electrocution.	Not	<ul style="list-style-type: none"> • Education—dangers when mix electricity and water • Engineering—removal of power sources from near pool; safety cut out switch • Appropriate signage on power sources
Breathless ^E	2007	United States of America	47; Male	An experienced diver disengages alarms for uninterrupted wreck footage and moves around opposite side of wreck from dive partner—dies of air embolism due to rapid forced ascent. Alternate air source was offered by dive master but refused.	Not	<ul style="list-style-type: none"> • Education—update knowledge • Engineering—ensure alarms cannot be disengaged • Computer developments which provide advice when air becomes low to reduce panic (common even among experienced divers)
Score One for Goliath ^F	2006	United States of America	42; Male	Diver drowned while engaging in outlawed goliath grouper poaching. His body was found entangled with speared grouper at the bottom of the ocean near coral rock cave entrance.	Not	<ul style="list-style-type: none"> • Education—need for appropriate fishing equipment including knife bans • Enforcement on grouper poaching bans • Licensing for purchase of spear fishing equipment
Faithful Flootation ^G	2006	Gabon	35; Male	Evangelist pastor drowned in front of his congregation as a result of attempt to replicate biblical event.	Not	<ul style="list-style-type: none"> • Education—swimming classes • Education among religious leaders that religious events are difficult to replicate

(continued)

Table 1 (continued)

Darwin Title	Year	Country	Age & Gender	Brief Description	Alcohol Involvement	Prevention Strategies
Off-Road Driving ^H	2005	South Africa	34; Female	A woman's remains were cut from her car after she drove the car into flooded roadway. Was in the Darwin Awards because it reported she thought, from reading the manual, the car could travel through floodwater; this has not been confirmed.	Not	<ul style="list-style-type: none"> • Education—floodwater is dangerous • Engineering—road blocks • Car manufactures—indicating that cars although durable and rugged can easily be swept away in swift moving water
Tide Wait for No Man ^I	2005	United States of America	37; Male	Man, a reported regular at the beach, decides to take nap from surf fishing under his car parked on the beach—became entombed when his car sank on top of him due to shifting sand with tide. Found by tow truck driver.	Not	<ul style="list-style-type: none"> • Signs—cars should not be on beach and danger associated with tide changes • Engineering—to prohibit cars from entering beach • Education—no sleeping under parked car and sleeping in tidal area is dangerous
Right Over the Dam ^J	2004	United States of America	26; Female	While attempting to maneuver recreational water craft, struck gate and craft fell into spillway; woman died as a result of impact. Passenger survived due to falling out of the craft before craft hit gate.	Definitely	<ul style="list-style-type: none"> • Education- if using dams as location for recreational activities stay away from edges • Engineering—consider gates, sufficient barriers, ability to withstand contact, and whether to prohibit entry at all • Avoid engaging in water-based recreational activities while under the influence of drugs and/or alcohol

(continued)

Table 1 (continued)

Darwin Title	Year	Country	Age & Gender	Brief Description	Alcohol Involvement	Prevention Strategies
Cold Call ^{K.L.}	2004	United States of America	17; Male	Young man, who was involved in his friend's cell phone being dropped over bridge onto ice, attempts to rescue. He went on ice despite warning and became submerged in the icy water. Onlookers attempted to rescue, including a boogie board being thrown, but he was not able to be safely retrieved from the icy water.	Not	<ul style="list-style-type: none"> • Engineering—barriers erected around bridges to stop things falling into water or on ice • Pre-entry precaution (e.g., PDF rope around waist) • Education—particularly targeting young people that ice is volatile and should be avoided
Hurricane Blumpkin ^M	2003	United States of America	21; Male	An early morning canoe ride ends badly when one of the three occupants drowns. After leaving a party, the canoe was placed into a flooded stream due to a recent hurricane. The deceased was the captain of the rugby team and all-round athlete.	Suspected	<ul style="list-style-type: none"> • Education—floodwater and recreational activities do not mix; avoid engaging in recreational activities involving water late at night; avoid engaging in water-related recreational activities when under the influence of alcohol or drugs • Appropriate equipment including PFD (life jacket) if entering water

Note. Please see the Primary Media Sources for Table 1 section in the references for full citations of the media sources of these Darwin Awards nominees.

Discussion

Darwin's theory of natural selection is built upon the idea of a struggle for existence and that survival is a function of characteristics of the surviving group that increase the probability of their survival to maturity and capability to reproduce (Ruse, 1989). Focusing on risks including awareness and perception of risk, which is influenced by experience, social networks, media, and education, could potentially be more informative than considering personal characteristics (Michalsen, 2003). After reviewing the 12 aquatic deaths listed, based on the limited information available, we have identified some factors that increase risk in aquatic environments along with offering prevention strategies that could reduce those risks.

Four deaths involved flood waters. The rule for inclusion as a Darwin Awards nominee is that the person must exhibit an astounding and uncommon lapse in sound judgment. Flood water fatalities, sadly, are not uncommon which highlights that either entering floodwater is not seen as a risk, or that people are faced with or perceive no viable alternative but to enter (which is a function of the floodwater and the location), or that they perceive the likelihood of injury or death in floodwater is low (i.e., an acceptable risk) (FitzGerald, Du, Jamal, Clark, & Hou, 2010). Preventing people from entering floodwater often relies on the ability to provide relevant and timely warnings, erect barriers, or position guards. However, these are often circumvented by the person; for an example of this, refer to Double Dip (FitzGerald, et al., 2010).

Individual perception of risk is influenced by experience, knowledge, and evidence to influence the perceived familiarity and interpretation of the threat (Michalsen, 2003). For example, *Breathless*, the diver who deactivated his alarms and left his diving buddy, was an experienced diver. This does not mean he was unaware of the risks, of the safety precautions, or wasn't trained on how to prevent and/or deal with an out-of-breath type situation. His decision to deactivate his alarm was likely a result of his diving experience, his familiarity with the equipment and the diving environment, and the desire for a clearer audio track to accompany his video, all culminated in a lower perceived threat. This nomination highlights that familiarity and the confidence that stems from experience can influence risk perception to the detriment of human life. The challenge is to remind experienced people that novel and potentially unexpected situations can and do occur and to determine how to engage them to think about how they should respond.

A majority of the fatalities occurred in the USA which likely reflects a reporting bias related to ease of data access and case verification for the American-based website. Despite the overrepresentation of American fatalities, a majority of the aquatic environments encountered are similar to those encountered in Australia with the exception of one fatality (i.e., *Cold Call*), which occurred as a result of interaction with ice, an unusual event in Australia. Given Australians unfamiliarity with ice and the risk associated with frozen rivers and streams this nomination could be viewed as a precautionary tale for overseas travelers in cold climates (Leggat & Klein, 2001).

The literature clearly identifies that prevention should start before heading out the door in the form of pre-event preparation including checking equipment, checking weather conditions, and having appropriate training including first aid

(Franklin & Leggat, 2012). None of the newspaper articles reporting the deaths we reviewed included explicit prevention information; however, with the limited information available, the authors generated possible prevention strategies for each death (Smith, et al., 2012). The majority of the strategies are at the lower end of Haddon's hierarchy of control including engineering or administrative strategies (including education); however, not entering the water (i.e., elimination), is also one possible but unlikely prevention strategy (Haddon, 1973).

Two key modifiable risk factors were the consumption of alcohol in and around aquatic environments and population-based education in rescue and resuscitation driven by the presence of witnesses/fellow participators in the activity before the fatality occurring. Alcohol is a risk factor as its depressive effects can impair judgment, inhibit reflexes, and reduce physical capabilities (Driscoll, Harrison, & Steenkamp, 2004; Royal Life Saving Society—Australia, 2012). Although alcohol involvement was unknown for a large proportion of nominees perhaps the best case for the impairment that comes with alcohol use is Teaming With Crocodiles. In this case, the female fatality was reported to have been a local, that the location of her swim was a river locally known to be inhabited by crocodiles and hippos, and despite these risks she entered the water not once but three times. It is believed that alcohol may have been a factor although whether this alone is able to account for the risk-taking behavior will never be known. Descriptions of tourist fatalities illustrating antagonistic behavior toward animals, alcohol consumption, and unnecessary risk taking are not uncommon (Durrheim & Leggat, 1999).

Traditionally, there is a larger presence of male drowning fatalities compared with females (Royal Life Saving Society—Australia, 2012). The ratio of males to females in the presented aquatic fatalities suggests that this difference may not be as large as normally reported. Whether this is a function of females engaging in more aquatic activities, consumption of alcohol within the aquatic environment, or a function of the newsworthiness of female deaths generally is undeterminable (Royal Life Saving Society—Australia, 2012). Reducing alcohol and drug consumption, irrespective of gender, is identified as a key goal and mechanism to reduce drowning deaths within Australia; however, as yet there is no clear strategy in place to help achieve this goal (Australian Water Safety Council, 2012).

The presence of observers and fellow participants in a number of the cases is important. Multiple people were around, yet no specific objections to the behavior were noted in the media reports to have occurred before the activity. This does not mean that objections to their behavior or stating that they knew it was risky did not occur after the event. In only one of the cases, Cold Call, was there any warning of the danger, voiced hesitation, ceased engagement by friends, or prevention strategies employed. Whether this was a function of the age of the person, nature of the activity, or a function of the specific aquatic environment and the known dangers surrounding ice is unknown. We suggest that educating the general population on basic rescue techniques and resuscitation would prove invaluable for aquatic safety but also beneficial in other recreational and nonrecreational settings (Australian Water Safety Council, 2012; Royal Life Saving Society—Australia, 2012).

Many of these Darwin Award drowning deaths could have been prevented with foresight and an understanding of the risks involved; however, each year in Australia we continue to see people enter water after drinking alcohol, people drive

through flood waters, or individuals undertake aquatic activities which increase their risk (Royal Life Saving Society—Australia, 2012). Using the media as a vehicle to communicate the risk can and should be both proactive (before the event) and retrospective (linked to deaths), where the death is used to modify the perception of risk and engage the audience in preventative actions (Michalsen, 2003).

Conclusion

Aquatic deaths are common, yet what is reported in the media may not always give a clear indication of the regularity or circumstances with which they typically occur. We believe a review of aquatic fatalities listed as Darwin Award nominees has provided some insight into unusual, uncommon, or newsworthy aquatic deaths which may have been mitigated by widely-understood prevention strategies. Use of alcohol, presence of onlookers, and flood-related fatalities were common among our examples. These deaths were not dissimilar to common causes of aquatic fatalities in Australia. Ultimately, these deaths are indicative of the types of events which are deemed newsworthy which highlights the fact that the media can be an important conduit for prevention messages. Incorporating prevention messages into news stories has the potential to change risk perception, attitudes, and behavior that could reduce fatal drowning.

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