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Alcohol_Focused Drowning Prevention Campaigns: What Do We Know and What Should We Do Now?

Hannah Calverley
Federation University, Australia, hannah.calverley@gmail.com

Lauren Petrass
Federation University, Australia, l.petrass@federation.edu.au

Jennifer Blitvich
Federation University, Australia, jennyblitvich486@gmail.com

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Cover Page Footnote

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Abstract

Alcohol and drugs have been identified as key risk factors for youth (aged 15-24 years) and adult drownings in high-income countries (HIC). Whilst alcohol specific drowning prevention education programs have been developed and implemented, youth continue to be over-represented in drowning statistics, including those linked with alcohol. Therefore, this project aimed to: (i) review and assess all alcohol themed drowning prevention campaigns within HICs; (ii) determine whether the campaign had undergone evaluation for effectiveness; and (iii) provide recommendations to improve the effectiveness of future interventions. For each of the eighty-one HICs identified for the 2019 fiscal year, searches of peer-reviewed literature (through academic databases) and grey literature (through webpages and emails to organisations) were conducted. Twelve alcohol focused campaigns were identified, with only two providing limited information about program evaluation. For most campaigns identified, there was a dearth of information available and therefore assessment of campaign quality was unfeasible. This brief report highlights a lack of alcohol themed drowning prevention campaigns in HIC, and an absence of evaluations on their effectiveness. Implications associated with a lack of program evaluation are discussed and adoption of the recommendations from this brief report should enhance the quality of future research in this area.

Keywords: alcohol, drowning prevention, campaigns, program evaluation

Introduction

In High Income Countries (HIC), drowning is one of the top five causes of death for people aged 1 month to 24 years, with over 17% of all drownings in these nations involving this age group (World Health Organisation, 2014). To date, research has typically focused on identifying the overall drowning problem, and the implementation and evaluation of drowning prevention strategies for children aged under five years (for example Leavy et al., 2016), however there remains a lack of understanding of how best to prevent drowning in the later age groups.

Risk factors for youth drowning are dependent on several variables, including: age; gender; aquatic location; country of residence; and frequency of exposure to aquatic settings (Quan, 2014). Alcohol and drug use has been identified as a key risk factor, influencing 25-50% of drownings amongst youth (aged 15-24 years) and adults (Howland & Hingson, 1988; Quan, 2014; Quan & Cummings, 2003). In the UK between 2013-2017, 451 drowning fatalities were found to have involved alcohol and/or drugs: representing 29% of all unintentional drownings (Royal Life Saving Society UK, 2018). In Australia, alcohol was shown to be involved in 21% of all fatal drownings (Royal Life Saving Australia, 2018a), and 24% of all male drownings, with 67% of males who tested positive for alcohol recording a blood alcohol concentration of greater than 0.05% (Royal Life Saving Australia, 2018a). Despite the

development and implementation of alcohol specific drowning prevention programs in HICs, young people continue to be over-represented in drowning statistics, including those with alcohol involvement.

When analysing effective methods to deliver health education to young people, previous research has indicated variable success of media, including social marketing media campaigns (Glider et al., 2001) and public service announcements (Brannon & Pilling, 2005) to incite behaviour change. Previous publications have indicated that for a youth alcohol education campaign to be successful, it should comprise several elements, including: a theoretical underpinning; specificity to the target group, including culturally and context sensitive and developmentally appropriate information; comprehensive interactive training for the program providers; interactive and multicomponent delivery, including peer leaders; skills training for high pressure situations involving alcohol; provision of information relating to peer behaviours and social norms; and effective resources to reinforce prevention messages (Cuijpers, 2002; Foxcroft et al., 2002; Pentz, 2003; Thom, 2017). However, it is unclear if any alcohol themed drowning prevention campaigns align with such recommendations for effective practice.

No peer-reviewed literature is available on the evaluation and/or effectiveness of alcohol influenced drowning campaigns (Quan et al., 2008; Ramos et al., 2015). It is important to note that not all published research appears in peer-reviewed publications, with grey literature also providing an avenue for disseminating research of potential high quality (Bailin & Grafstein, 2010): however, the quality can vary considerably as it does not undergo a peer review process. Further, as grey literature may be distributed privately within organisations, or published outside the traditional academic publishing channels, searching is more time consuming and information can be difficult to discover and access (Osayande & Ukpebor, 2012).

Therefore, the primary aim of this paper was to search comprehensively both the peer-reviewed and grey literature to (1) identify all available information about alcohol themed drowning prevention campaigns in HIC; (2) identify and assess the information provided to the targeted groups to maximise the likelihood of success; and (3) identify whether campaigns had undergone evaluation for effectiveness. Finally, the paper provides recommendations to improve practice, with the explicit goal of enhancing the effectiveness of future interventions.

Method

A comprehensive search was conducted for literature on alcohol-focused drowning prevention campaigns in HIC. A list of HIC were identified from The World Bank Group (2018) for the 2019 fiscal year, and for the purpose of this study, drowning campaigns were defined as campaigns or information made

available with a direct focus of preventing death by drowning. The inclusion criteria required campaigns to specifically focus on the role of alcohol in drowning and heavily incorporate this within the prevention and education messages. Campaigns were excluded if their prevention messages did not provide details about alcohol and its involvement in drowning risk. The age focus of the campaigns were recorded to identify commonly targeted age groups, but no age restrictions were applied within the inclusion criteria due to the infrequency of alcohol themed drowning prevention programs.

Search Strategy

The search strategy logic is outlined in Figure 1. We began by reviewing drowning prevention webpages for each of the identified HIC and used The International Life Saving Federation (2018) Member Federations webpage to assist in finding websites for drowning prevention and/or lifesaving groups and organisations within each of the 81 HIC. Where a webpage was provided and accessible, if necessary, it was translated into English, and searched for references to ‘alcohol’ or equivalent. If no page was listed, the country, along with the terms “drowning prevention” and/or “water safety”, were searched using Google. All identified and relevant webpages were searched for references to ‘alcohol’ or the equivalent translation. If no relevant sites were found, the country was referred to as ‘unable to find information’ (n=23). In total 71 websites were analysed and records on these pages were reviewed from the earliest available through to 1st November, 2018.

Academic databases were also comprehensively searched for any peer-reviewed literature containing information relating to alcohol themed drowning prevention campaigns and evaluations. PsycINFO; PubMed; Scopus; CINAHL; SPORTDiscus; ScienceDirect; Medline; Cochrane Library; and Web of Science databases were searched from the earliest records available to the 1st November, 2018. These databases were selected as they have been used previously to inform drowning prevention systematic reviews (Hamilton et al., 2018; Peden et al., 2016). Search terms included combinations of the following: “alcohol”; “drowning”; “campaign”; “initiative”; “program”; “prevention”. The social media platform ‘Twitter’ and the Google and Google Scholar search engines were also explored using the same terms, for references or promotional material for any alcohol focused drowning prevention programs.

Email addresses (n=65) for relevant drowning prevention organisations in 49 countries were identified through some of the analysed websites, and these were used to request information relating to alcohol themed drowning prevention campaigns or information within the respective country. Four emails rebounded due to a fault in the advertised email address. Five organisations responded; four stated there were no relevant campaigns or materials, and one provided appropriate information. After one month, follow-up emails were sent to organisations in the 40 countries that had not responded. This resulted in a

further seven responses, four stated no relevant campaigns existed, and three provided information relating to appropriate campaigns or relevant promotional material.

Subsequent analysis excluded ten of the retrieved campaigns or references based on: insufficient detail being available that confirmed alcohol was a significant part of the campaign; and/or webpage references to alcohol were inappropriate to be referred to as a 'prevention message' due to an inadequate level of information provided about the risks of combining alcohol and aquatic activity. A total of 12 campaigns were reviewed and assessed on the level of information available about alcohol and water safety, the group the information targeted and any evaluation on its effectiveness.

Results and Discussion

Following extensive searching through various methods, 12 campaigns, relevant materials or information were retrieved from five predominantly English-speaking Western nations (Table 1). As alcohol use is related to cultural norms (Brown et al., 2001; Patock-Peckham et al., 1998) and legal restrictions (Moller, 2002), it was acknowledged this may explain the lack of alcohol specific campaigns in some nations. For example, there is a strong Muslim culture in Brunei and alcohol is prohibited (GOV.UK, 2018), consequently this nation is unlikely to produce alcohol themed campaigns.

The majority of the campaigns and information was aimed at targeting the public about the risks of combining alcohol and aquatic activity and how to keep safe around water, however there was considerable variation in the level of detail available (Table 1). Due to this lack of information and the small number of campaigns retrieved, the aim to assess the programs against pre-determined criteria to maximise success was unable to be fulfilled. As alcohol influenced drownings are prominent amongst young people in all HIC (World Health Organisation, 2014), it is concerning that so few prevention campaigns were discovered in this audit. Of further concern, evidence of program evaluation was available or provided for only two campaigns, hence the effectiveness of campaigns is unknown. None of the three campaigns that focused on young people provided any evaluation of effectiveness.

Figure 1. Search strategy for identifying alcohol themed drowning prevention campaigns.

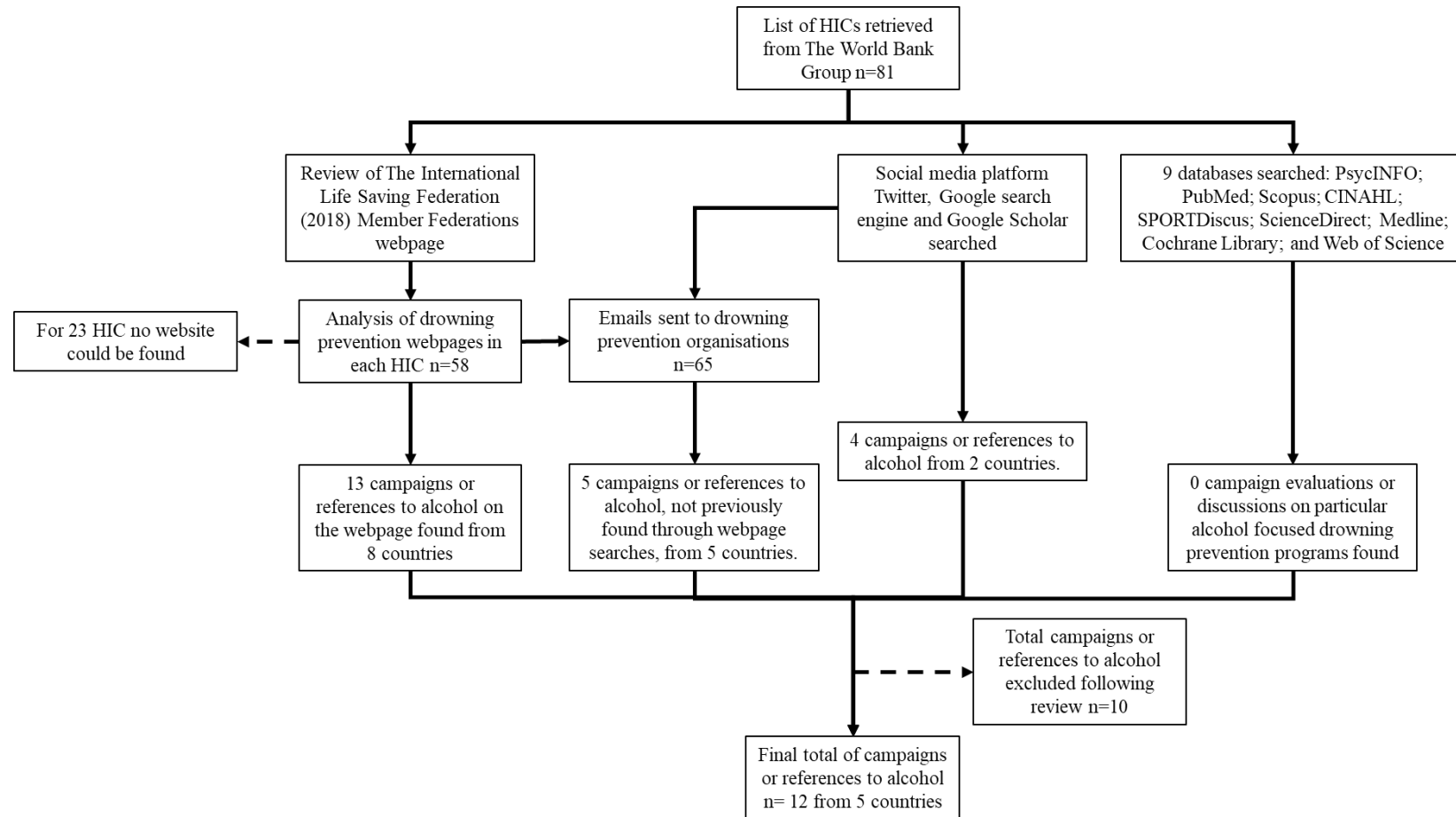


Table 1

Alcohol-focused drowning prevention campaigns and general information provided in High Income Countries (HIC).

Country	Campaign/s, program/s and any other relevant material	Details	Evidence of evaluation
Australia	Sinkers #DontDrinkAndSink Royal Life Saving Australia (2018e)	Focused on young people and their alcohol use around water using celebrity endorsement. The campaign had videos of celebrities drinking from premixed cans of alcohol which were called, for example, 'Vodka and Sea Water'. They then spat out the contents and the campaign message followed 'Drinking and swimming don't mix'.	No
	Don't let your mates drink and drown – focused on all ages but mainly men Royal Life Saving Australia (2018b)	Mainly focused on men aged 25-34 and informing them to look out for their mates around water. Messages encouraged men to stand up against risk taking behaviour around water, including alcohol consumption. The campaign encouraged men to 'Be like Dave' who is a fictional risk aware character and is the face of the campaign.	No
	Respect the River Royal Life Saving Australia (2018d)	Targeted all river users and informed about the dangers of inland waterways, including alcohol use around the river. This campaign followed research that indicated Australian rivers as a prime location for drownings.	No
	Swim safe swim sober Royal Life Saving New South Wales (2013)	An online program for school leavers in New South Wales, encouraged them not to drink alcohol and swim. The program was provided through secondary schools and was described as 'an innovative online education experience' (Royal Life Saving Australia, 2013).	No
	Play it safe by the water Victoria State Government & Life Saving Victoria (2019)	A campaign throughout the state of Victoria. The aspect of this campaign relevant to alcohol focused on men and informing them of the risks of alcohol consumption in, on and around water. The campaign linked to messages from 'Don't let your mates drink and drown' and recommended standing up to friends who want to swim after drinking.	No
Canada	Operation Dry Water	Targeted boat users and encouraged them to learn the legal blood alcohol limits of driving a boat. The campaign also increased enforcement on	Yes

	National Association of State Boating Law Administrators (2019)	waterways over public holidays to monitor intoxicated boat users and publicised messages about alcohol awareness leading up to those days.	
	Boat Sober Lifesaving Society (obtained through personal communication)	Targeted boat users and encouraged them to learn the legal blood alcohol limits of driving a boat. This campaign also included information about the effect of other recreational drugs on ability to drive a boat.	Yes
Ireland	Beer mats with alcohol drowning messages Irish Water Safety (obtained through personal communication)	Targeted people drinking in bars or pubs informing them of the dangers of alcohol use and aquatic activity. The beer mats contained statistics about drownings in Ireland, the risks of alcohol and swimming, and encouraged lifejacket use and learning swimming and lifesaving skills.	No
New Zealand	The Swim Reaper Water Safety New Zealand (2019)	Social Media campaign targeting young people, particularly males, with a caption of 'swim dumb and you're done' (Water Safety New Zealand, 2019). The campaign involved pictures of the Grim Reaper in different aquatic settings and posting comments on social media encouraging young people to be foolish by, for example, swimming whilst intoxicated.	No
United Kingdom	Don't drink and drown Royal Life Saving Society UK (2018)	Targeted drinkers of all ages and informed them of the dangers of combining alcohol and aquatic activity as well as walking near water when intoxicated. This campaign followed a sequence of student drownings, therefore targeted young people with some of the messages and videos.	No
	#Safe_And_Dry Kent Search and Rescue (2019)	Targeted drinkers of all ages and informed them of the dangers of combining alcohol and aquatic activity as well as walking near water when intoxicated. One feature of the campaign included promoting to people going on nights out to stay away from the river.	No
	Be Water Aware National Fire Chiefs Council (2018)	Targeted runners and walkers, drinkers and people away from home. Activities conducted through fire and rescue services. Of particular prominence was encouraging people to be vigilant whilst on holiday and in unfamiliar surroundings.	No

In the current analysis, campaigns conducted in Australia and Canada contained the greatest level of detail. Canadian and Australian agencies (Royal Life Saving Australia and the Life Saving Society) also provided information about press releases and webpages detailing several of the programs. Within the designated time period, Canada was the only country that provided, via email, an unpublished evaluation of one of the campaigns relating to boating safety and the messages it was promoting. The evaluation considered the percentage of those questioned who recalled advertised safety messages, their reactions to the campaigns, and compared these statistics to previous years. However, the evaluation lacked rigour in that they did not detail the level of evaluation that was conducted, for example how many participants were contacted, the time between the program being publicised and the evaluation taking place, and any qualitative results. Therefore, the scant information provided in the evaluation did not strongly support the claims made of the program's success.

For Australia, through the Royal Life Saving Australia website, yearly drowning reports provide descriptive statistics, including the role of alcohol, and compare these rates to previous years (Royal Life Saving Australia, 2018c). Further, there are numerous evaluation reports which have appraised certain campaigns and messages provided to the Australian public (Royal Life Saving Australia, 2018c). On review, three of these reports detailed alcohol use and drowning risk amongst the target groups, such as the New South Wales Grey Medallion program evaluation report which detailed that those surveyed identified alcohol as a high risk factor for drowning in their age group (Royal Life Saving Society - New South Wales, 2014). However, no reports solely focused on evaluating any of the country's alcohol themed drowning prevention programs.

Program evaluation can occur at different times for different purposes (Green & Kreuter, 2005). For example, evaluation should occur in the diagnostic and implementation phases to document program fidelity (Helitzer & Yoon, 2002) and ensure programs are making a positive difference (Posavac, 2015). Also, program evaluation at these stages typically entails assessment of program delivery and uptake to enable appropriate amendments if implementation quality reduced (Helitzer & Yoon, 2002). Further evaluation should also be conducted in the follow-up phases of the program, to monitor how it is received and ensure the organisation can remain aware of its progress in changing behaviours and facilitate prompt action to correct any arising issues as they occur.

The lack of program evaluation evident within the results of this study is of concern as questions remain unanswered about: how well each of the drowning prevention programs met their stated objectives; the impact on the participants and the community as a whole; and whether there were any planning and implementation issues. This lack of evaluation also inhibits the

repeatability of the programs as details of the development, implementation and execution are lacking and therefore future attempts at delivering similar campaigns will be unable to build from the efforts previously undertaken.

Recommendations for Effective Intervention and Future Research

The findings of this audit clearly demonstrate that the effectiveness of current alcohol focussed drowning prevention campaigns is largely unknown, as intervention details are lacking and program evaluation is largely absent. For best practice and to support effective program outcomes, sound program design, incorporating thorough, evidence-based planning, along with process, impact and outcome evaluation, is required ((Green & Kreuter, 2005; Helitzer & Yoon, 2002; Posavac, 2015); or other relevant sources). To address the evaluation vacuum, it is recommended that organisations allocate time and resources to program evaluation at each stage of program delivery: prior to program commencement to provide a baseline; during program delivery, to enable any necessary amendments if required; immediately post evaluation to confirm whether change has actually occurred; and at a time period after the implementation, to determine the long-term effect of the program. Effective evaluation is a cost that needs to be considered at the planning stage, and funding applications should ensure that sufficient resources are requested for this purpose.

It is also important that practitioners and researchers share both their programs and the evaluations of these. The generation of publicly available reports and/or peer-reviewed publications containing this information, i.e. the development and implementation of drowning prevention programs and the results of evaluations, will contribute to increased program quality. Further, such results and publications could be used to highlight the importance of evaluation and advocate for the expansion and/or continuation of the program.

Research is also required to provide an evidence base to underpin future campaigns that investigate youth attitudes, perceptions, knowledge and influencers on behavioural practices relating to alcohol use in aquatic settings. The Royal Life Saving Society Australia highlights this, calling for more thorough research of drowning risk factors, such as alcohol, along with behavioural research into the decision making processes of at-risk groups to aid in the development of evidence-based prevention programs (Mahony & Peden, 2016). Doing so would ensure that campaigns were current and targeted the cause of the problem instead of analysing drowning statistics and promoting unevaluated and unsupported programs.

Conclusions

Despite previous reports calling for more campaigns and research focused on youth alcohol use in aquatic contexts (Clemens et al., 2016; Peden et al., 2017), this work highlights a substantial lack of such campaigns in all HIC, as well as

an absence of any evaluations of program effectiveness. Bringing program evaluation and behavioural research to the forefront of drowning prevention practice and disseminating this information widely should enable both researchers and practitioners to build on previous work and enhance the progress in the prevention of alcohol influenced youth drownings.

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