



Surviving the swim: Psychosocial influences on pool owners' safety compliance and child supervision behaviours



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ABSTRACT

In Queensland, Australia drowning deaths of children under the age of 5 have increased over the last 3 years, with home swimming pools being the most common site of this tragedy. Restriction of access to pools and supervision of children using the pool are two behaviours that can prevent drowning. Pool owners who were parents or guardians of children aged under 5 years ($N = 242$) completed a survey regarding these behaviours. We examined the impact of owners' risk perceptions and feelings of anticipated regret on the pool safety intention and behaviours of (1) restriction of child access and (2) supervision of children, after taking into account established psychosocial determinants of decision making conceptualised by the theory of planned behaviour (attitude, subjective norm, perceived behavioural control). In addition, underlying beliefs (attitudinal, normative, control) were examined. While anticipated regret significantly predicted intentions for both behaviours, risk perception was not a significant predictor of intention to perform either behaviour. The established decision-making constructs of attitudes, norms, and control factors influenced intention, with intention and control factors predicting behaviour. Furthermore, the critical beliefs identified in this study, in particular the approval from close others and experts in the swimming domain, provides for a better understanding of pool safety behaviour. The findings based on psychological variables and critical beliefs can be applied to future intervention strategies aimed at decreasing the incidence of childhood drowning.

1. Introduction

1.1. Drowning deaths in Australia

Although Australia is recognised for its swimming culture and enjoyment of water activities, drowning deaths remain a tragic consequence of this leisure pursuit. Between July 2016 and June 2017, 291 drowning deaths occurred in Australia, with the state of Queensland representing the second highest number of drowning fatalities (Royal Life Saving Society Australia, 2017c). This figure represents a 4% decrease on the 10-year average; however, drowning deaths in children aged 0–4 years still increased in this time period. Swimming pools are the most common site in which drowning occurs for this age group, representing 45% of all drowning deaths in children under 5-years-old. To combat these preventable deaths in young children, behaviour change is suggested as one strategy for drowning prevention (Royal Life Saving Society Australia, 2017c). Two behaviours that can assist in preventing child drownings include: (1) restriction of access to pools

(i.e., pool safety compliance including pool fence maintenance and removal of objects around fences) and (2) the appropriate supervision of children using the pool (e.g., being within arm's reach of children) (Royal Life Saving Society Australia, 2017a, 2017b). A first step in any behaviour change strategy for pool owners is to understand their decisions to undertake preventative action. Two constructs that may be useful to assist understanding the determinants of pool owners' decisions is a consideration of the weighing up of risk perceptions and the expected emotions one would feel from not enacting safe strategies (anticipated regret).

1.2. Risk perceptions

Risk perceptions are traditionally conceptualised as a probability of adverse effects (Rayner and Cantor, 1987). Individuals evaluate the probability of the occurrence of an event and then make decisions about performing or not performing a certain behaviour. Unfortunately, simple heuristics often used by people (except those with specific

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knowledge like experts) can underestimate the probability of a risky event and, therefore, produce negative consequences (Tversky and Kahneman, 1974). For instance, contrary to most parents' beliefs that children will make loud noises when water accidents happen, drowning kills children swiftly and quietly (Royal Life Saving Society Australia, 2017c). Thus, how people evaluate risks plays a vital role in swimming pool safety. Although not always included in models reflecting common decision-making determinants, risk perception is featured in some models including the Health Belief Model (Becker and Maiman, 1975) and Health Action Process Model (Schwarzer, 2008). When added to models where risk perceptions are not explicitly included such as the Theory of Planned Behaviour (TPB; Ajzen, 1991), previous studies examining safety behaviours have suggested that risk perceptions are an important influence on people's decisions after taking into account the standard constructs in these models including attitudes and social influence (e.g., Pearson and Hamilton, 2014; White and Hyde, 2010). Given the potential role of weighing up risks in people's pool safety decisions, both one's susceptibility to the risks of not performing a behaviour (risk-susceptibility) and a consideration of how severe any risk outcomes would be of not performing a behaviour (risk-severity) are investigated in our study to explore their role in pool safety decisions.

1.3. Anticipated regret

In addition to the cognitive processes involved in weighing up risks, other studies found that anticipated emotions are also an important component in decision making for risk behaviours (Loewenstein et al., 2001; Slovic, 1996). Unlike risk perceptions—an immediate evaluation of current circumstances—anticipated emotions are associated with situations/consequences separate from the moment and have been shown to be an additional variable influencing risk behaviours (Loewenstein et al., 2001). As our study aimed to understand what influences people to undertake preventative action to avoid the negative outcomes of water accidents, we included anticipated regret, a negative emotion experienced by a person when they reflect on the potential outcomes of performing or not performing a behaviour (Sandberg and Conner, 2008). Previous findings indicate that anticipated regret has a moderate and stable association with a range of behaviours (Brewer et al., 2016; Sandberg and Conner, 2008).

1.4. The theory of planned behaviour framework

Although a consideration of risk perceptions and anticipated affect may serve to partly explain the decision-making processes of pool safety behaviour, it is important to evaluate their influence after taking into account other common determinants of people's behaviour. To that end, in trying to better understand the safety actions of pool owners, we draw on a commonly used model of decision making, the Theory of Planned Behaviour (TPB; Ajzen, 1991).

According to the TPB, intention is the most proximal determinant of people's behaviour. The three determinants of intention are attitudes (how favourable/unfavourable people feel about performing the behaviour), subjective norm (perceived pressure from others to perform the behaviour), and perceived behavioural control (PBC; perceptions of control over performing the behaviour, also believed to impact on behaviour). These constructs are also known as the direct measures. Underlying these three determinants are behavioural beliefs (advantages/disadvantages of performing the behaviour); normative beliefs (referents who would approve/disapprove of performing the behaviour); and control beliefs (specific barriers/facilitators of behavioural performance), respectively. Each belief is known as an indirect measure for the relevant direct construct. The TPB framework, with an ability to explain on average 27% to 39% of variation in behaviours and intentions (Armitage and Conner, 2001), has been applied in a wide range of behaviours including safety behaviours (Gauld et al.,

2014; Pearson and Hamilton, 2014; White and Hyde, 2010). As such, we expect that the TPB can serve as a useful framework to understand the role of risk perceptions and anticipated regret in pool owners' safety decisions.

1.5. Critical beliefs

An additional feature of drawing from a TPB framework is the ability to identify critical beliefs (Ajzen, 1991) that can serve to inform targeted intervention strategies (Fishbein et al., 2001). In a study on the use of lifejackets to prevent drownings in children, Giles et al. (2010) found that control beliefs (e.g., inaccessibility of lifejackets at the local stores) emerged as a determinant of intention to wear life jackets, along with behavioural beliefs (e.g., the perception that lifejackets prevent people from drowning) and normative beliefs (e.g., individuals who are important to the person do not support lifejacket use). In a study on parental expectations for their school-aged child to wear a helmet while cycling, normative beliefs emerged as a strong predictor to use safety helmets and resulted in a successful intervention to change young people's behaviour (Quine et al., 2001).

While previous studies have identified TPB beliefs in accident and injury prevention, there has been a lack of research exploring the critical beliefs (the most salient beliefs in determining one's behaviour) related to drowning prevention for young children. Moran and Stanley (2006) examined parental perceptions of toddler water safety and found that, while parents had a limited understanding of the factors that contribute to toddler drowning (e.g., being unaware that a lack of supervision was a primary factor in most toddler drownings), significant changes in parental water safety attitudes were evident following a water safety education intervention. Furthermore, although TPB beliefs were not examined specifically, the findings of the study indicated the importance of further exploring beliefs about pool safety and young children.

1.6. The current study

The aims of the current research were to (1) assess the role of risk perception and anticipated regret in pool owners' restriction and supervision intentions after taking into account common decision-making determinants; (2) examine critical beliefs that have influenced these key safety behaviours. Using the TPB as a broad framework to inform the research, we hypothesised that intention could be predicted by anticipated regret and both risk-susceptibility and risk-severity after taking into account attitudes, subjective norm, and PBC (and that intention and PBC would predict behaviour). Further, identification of the underlying critical beliefs could provide future interventions with more tailored approaches (Fishbein et al., 2001).

2. Method

2.1. Design and procedure

Pool owners who were parents or guardians of children aged under 5 years were recruited face-to-face from 4 swimming schools around Brisbane, Australia. Participants were invited to complete a 20-min survey on attitudes and beliefs about restricting and supervising young children using the pool (Time 1). Participants who agreed to participate at Time 2 provided their emails/phone numbers. The Time 2 follow-up questionnaire assessed participants' self-reported pool safety behaviour over the last 2 weeks. To thank participants for their time, an AUD\$20 shopping voucher was offered upon completion of the follow up survey.

2.2. Participants

At Time 1, 242 participants (68 males, 173 females) aged between 18 and 67 years ($M_{Age} = 37.45$, $SD = 8.93$) completed the main

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