



Development and evaluation of an intervention to reduce rip current related beach drowning

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ABSTRACT

The objective of this research was to evaluate a campaign to improve beachgoer recognition of calm-looking rip currents, known to contribute to surf drowning. Posters, postcards, and brochures conveying the message “Don’t get sucked in by the rip” were distributed in an intervention area. Beachgoers were interviewed in this and a similar control area one year before and immediately after the intervention (respective response rates: 69.9% and 82.3%). Consenting respondents were sent follow-up questionnaires after approximately 6 months and 55% responded. In the intervention area, 28.8% of post-intervention, and 57.2% of follow-up respondents, had seen our campaign. At post-intervention, intervention respondents demonstrated improvement (relative to baseline) in intentions to swim away from a calm-looking rip, ability and confidence in identifying a rip, intention never to swim at unpatrolled beaches, and responses to being caught in a rip, compared to the control respondents. Similar improvements were observed post-intervention for respondents in the intervention area who had seen our campaign (relative to those who had not), and at 6 month follow-up for intervention respondents (relative to control respondents). The relatively brief print-based campaign was effective in warning beachgoers about calm-looking rips.

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1. Introduction

Beach safety is a significant public health concern in many places where beaches are an important part of people’s lives and a central attraction to visitors. Over the 5 year period from 2005 to 2009 the US Lifesaving Association (2011) recorded an average of 96 beach drownings per year (recorded at 95% of ocean beaches and some non-ocean sites patrolled by lifeguards). In Australia, an estimated average of 32 people drowned annually at surf beaches during the years 2001–2005 (Morgan et al., 2008). Further, it has been estimated that for every drowning death, between 4 and 10 near-drowning victims are hospitalised, and up to 10% of these cases suffer neurological damage (Australian Department of Health and Aged Care, 1999).

Beaches that experience breaking waves across a wide area are prone to the occurrence of strong, narrow seaward flowing currents known as rip currents (henceforth ‘rips’), which are widely recognised as a major hazard to bathers on surf beaches. Rip currents are responsible for 80–90% of the tens of thousands of surf rescues

conducted by lifeguards in both the United States and Australia each year (Brewster, 2005; Short, 2007a). They are also involved in a very high proportion of beach-related drowning (Morgan et al., 2008; Short, 2007a; Gensini and Ashley, 2010). Thus there is a need for beach safety strategies that specifically target rip-related drowning (Sherker et al., 2008).

Australia has an accessible high-energy coastline and so a need and a history of activities to prevent drowning. Its primary beach safety strategy involves marking a section of beach with a pair of red and yellow flags, that identify an area supervised by professional lifeguards and volunteer lifesavers, who position the flags partly on the basis of surf conditions (including rips). Drowning between the flags is extremely rare (Surf Life Saving Australia, 2011). Instead, beach-related drowning occurs outside the flagged areas on both patrolled and unpatrolled beaches. This is not surprising, given that in most countries few beaches are patrolled. In Australia only 3% of the estimated 11,000 beaches are patrolled and lifeguard supervision is typically limited to warmer months and daytime hours. Even when flags are available, people sometimes choose to swim outside them. These people may be endangered by a lack of knowledge about rips. Beach rips, which occupy deeper channels between shallower sand bars and appear as calmer areas between regions of breaking waves, are the most common type

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