

Between The Flags: An Assessment of Domestic and International University Students' Knowledge of Beach Safety in Australia

by Roy Ballantyne, Neil Carr and Karen Hughes

Abstract:

This paper assesses the behaviour of international and domestic students on beaches in Queensland, Australia and their knowledge of beach safety practices. The data for the research was collected from Surf Life Saving Queensland lifeguards/savers, using a focus group interview and questionnaire survey distributed to a convenience sample of students from The University of Queensland. The results of the research indicate that the international students are more likely to engage in "risky" behaviour at the beach and less aware of beach safety practices than their domestic counterparts. However, the domestic students also showed significant room for improvement in their behaviour and knowledge of safe practices while at the beach. Of particular concern is the failure of a significant number of students to operationalise their knowledge of safe beach practices to avoid swimming in potentially dangerous circumstances.

1. Introduction

In the year ending 2002, visiting the beach was the second most popular activity participated in by domestic visitors to Queensland and international visitors to Australia (Tourism Queensland, 2003). Queensland's beaches attract approximately 18 million people each year (Surf Life Saving Queensland, 2000). Based on the figures of visitors to Queensland in general it is possible to estimate that the majority of the beach users in the state are domestic tourists, 67% of whom originate within Queensland whilst the rest are interstate visitors. With 79% of international visitors to Queensland coming to the state for leisure/holiday-oriented reasons it is likely that a significant proportion of the 1.8 million international tourists who visited the state in the year ending June 2003 went to the beach (Tourism Queensland, 2003).

Although beach environments are generally regarded as places of leisure and enjoyment, they are also sites of potential danger. The extent of the problem in Queensland is illustrated by the fact that during the summer of 2000/2001 lifesavers administered first aid to 14,964 beach goers and conducted 3370 rescues, 42 of which required the use of resuscitation (Surf Life Saving Australia, 2002). Unfortunately, not all rescues conducted by lifesavers are

successful, and between 1999 and 2002 65 people drowned on Queensland's beaches. Yet in most cases, had individuals' adhered to basic safety practices, their deaths could have been prevented (Thygeson, 1976; Australian Water Safety Council, 1998; Borozne, Morehouse, & Pechar, 1977; Surf Life Saving Queensland, 2000). The increasing number of preventable fatalities highlights the importance of providing visitors with detailed information on the risks inherent in beach recreation and methods of minimising such risks. It is imperative that community groups such as Surf Life Saving Queensland (SLSQ) develop informative and persuasive educational materials to raise the public's awareness of potential danger and reduce both intentional and unintentional risk-taking behaviour. To do this effectively, management needs to identify current knowledge and perceptions of beach environments.

To date, beach safety information has predominantly focused on the importance of swimming in patrolled areas, as the majority of fatalities on Australian beaches occur outside areas patrolled by lifeguards (Manolis & Mackie, 1988). Even the television promotion by Surf Life Saving Australia (SLSA), entitled 'Heroes of the surf' does not mention safety advice beyond "swim between the flags—we cannot rescue you if we cannot see you". Indeed, in the summer of 2000/2001, all of the 77 fatalities on Australian beaches occurred outside areas patrolled by lifeguards (Surf Lifesaving Australia, 2002). It is argued that visitors may unknowingly take risks due to their unfamiliarity with beach environments, a situation which exposes them to a range of potential dangers including unknown currents, unexpected wave activity, unfamiliar tidal conditions, variations in water depth, and sudden changes in the sea bottom (Priest, 1977). Rips (strong currents that can carry swimmers out to sea) are particularly dangerous and account for 89% of the rescues conducted by SLSQ. Despite this, no mention is made of rips in SLSA's television promotion and although the association does mention rips and how to escape them on its website (<http://www.slsa.asn.au>) it does not provide any photos or graphics to show what a rip is. Within the context of Queensland, SLSQ's website (<http://www.lifesaving.com.au>) focuses on swimming between the flags. However, they do also discuss rips and have an illustration of how rip currents behave.

International visitors may also be unfamiliar with safety signs, flags, and lifeguards' instructions. Indeed, Richards (1997) found that only 23 of the 52 international visitors she studied in Cairns, Australia, knew that a yellow flag signifies dangerous conditions, and only 60% correctly stated that a red flag indicates swimming is prohibited. Although the green 'safe to swim' flag was correctly identified by 78% of Richards' international visitors, only 53% knew

two red and yellow flags are used to delineate patrolled swimming areas. While it is tempting to assume that Australians would be more familiar with beach safety issues than international visitors, this may not be the case. For example, Richards (1997) found that 28% of the 221 domestic beach visitors she questioned could not identify rips, and a further 36% could only do so in some situations. Furthermore, not all the domestic visitors were able to correctly identify the yellow flag (25%) or the red flag (20%). Even the yellow and red flags were not universally recognised, with 22% of domestic visitors unsure of their meaning.

The aim of this paper is to explore the safety knowledge and behaviour of international and local beach visitors by questioning students at the University of Queensland, Australia. The decision to focus on university students relates to the fact that they represent a separate and significant segment of the tourist population that has been relatively neglected by researchers (Chadee & Cutler, 1996; Sirakaya & McLellan, 1997).

2. Methodology

Data was initially collected for this study via a focus group interview in April 2002 that lasted approximately 1 hour with a convenience sample of two female and five male lifeguards (paid employees of SLSQ) and lifesavers (unpaid volunteers) that worked for SLSQ. During the interview the behaviour of international and domestic visitors to beaches on the Southeast Queensland coast was examined from the perspective of surf rescuers. The members of the focus group sample were highly experienced lifeguards/savers, with between 11 and 26 years (16 years on average) experience. The decision to focus on SLSA lifeguards/savers is related to the fact that they are a feature of virtually all popular Australian beaches and their contribution to beach safety is widely recognised (Bigby, McClure, & Green, 2000).

The rest of the data that was needed to successfully complete this study was collected using a questionnaire survey distributed in the lecture environment to a convenience sample of students at the University of Queensland, during November 2002. In total, 176 students were surveyed, 70% were Australian and 30% were international students. Using a multi-method approach supported by Pizam and Sussmann (1995), the comments of the lifeguards/savers during the focus group interview were used in the construction of the questionnaire. The need to collect data from international students in Australia, the majority of who come from Asia (Bohm, Davis, Meares, & Pearce, 2002), was a reason behind the decision to use a questionnaire. This method avoided the need

for students to express themselves in interview or focus group contexts, which tend to be stressful and threatening for Asian students in particular. This cultural issue has the joint effect of dissuading Asian students from taking part in interviews and focus groups, and inhibiting the freedom of expression of those who do take part in these types of data collection methods (Lin, Endler, & Kocovski, 2001).

During analysis of the focus group and survey data the emphasis was on understanding "the world of lived experiences from the point of view of those who live it" (Locke, 2001, p. 8). Therefore, all the data was analysed using an interpretative approach that attempted to provide a holistic analysis of the variety of the students' knowledge of beach safety and behaviour when at the beach and the views of the lifeguards/savers rather than attempt to reduce them to a 'norm' (Kitchin & Tate, 2000; Glesne, 1999). Statistical analysis of the survey data was undertaken using a series of chi square tests to add to the understanding of the information provided by the students. The significance level used for all the chi square tests was 0.05.

3. Results and Discussion

3.1. Swimming at the Beach

SLSA recommends people swim between the red and yellow flags, in the presence of others, and avoid calm areas that could signal the presence of rips. While the majority of the sample (68%) stated they would swim between the flags and/or where the lifesavers were, a significant proportion (32%) did not. The majority of Australian students (90%) stated they would swim between the flags or where the lifesavers were located when visiting the beach compared with only 51% of the international students. Another safety message that does not appear to be working well is the importance of reading beach reports, with only 1% of the whole sample stating they would do this when deciding where to swim.

89% of all rescues conducted by SLSQ occur in rips, yet only 109 students (62% of the sample) knew what a rip was. The result of a chi square test indicates there is a significant difference between the Australian and international students' knowledge of rips ($\chi^2=49.657$, $p=0.000$), with most of the Australians (79%) stating they knew what a rip was, while the majority of the international students (77%) did not. These figures support the research of Richards (1997) who found that the majority of international visitors were unable to consistently identify rips. Although 62% of the sample claimed to know what a rip was, the majority of this group

(64%) were unable to explain how they would recognise one. A similar percentage of the international (64%) and domestic (67%) students who knew what a rip was stated they could not recognise one. Only 18% of those students who knew what a rip was said you could recognise one by the presence of apparently calm water while only 2% identified rips with the presence of murky coloured water. This is despite the fact that these are the two most common indicators of rips according to Surf Life Saving Queensland (2000).

The inability of most of the students to recognise rips was also apparent when respondents were asked to indicate where they would swim in a photograph of an Australian beach that pictured two rips. Overall, 61% of the students selected the rips as where they would be most likely to swim. One of the main reasons given for this choice was "calm water means it is safe to swim" (mentioned by one in five students). A chi square test found there was no significant difference in where the domestic and international students would swim in the photograph containing the rips ($\chi^2=0.031$, $p=0.860$). The similarity between these two groups is shown in Table 1.

Table 1. Where students would swim at the beach (% in brackets)

Where Students Would Swim	Domestic Students	International Students	Overall Student Sample
Either points A and/or B	76 (61)	32 (62)	108 (61)
Neither points A or B	47 (39)	21 (38)	68 (39)

The fact that most international and Australian students could neither describe nor identify rips is worrying as it suggests there may be a serious gap in the beach safety knowledge of beach users. Awareness of rips and their potential dangers is worthless without an ability to recognise them, as only the latter can help to avert unsafe behaviour. The lifeguards who took part in the focus group interview supported this point. Also of concern is the fact that although there were no lifesavers or flags in the photograph, the majority of students said they would have gone swimming on this beach. This is despite the fact that most of them stated they would swim between flags when visiting the beach. These results suggest that while the majority of respondents know about safe beach behaviour, they do not necessarily put this knowledge into practice. This contention is supported by Crook (2000), who found that while 92% of the 299 Australians sampled said it was important to swim between the flags, only 61% of them regularly did so.

3.2. Recognising lifesavers and their flags

Lifesavers in the focus group interview claimed the yellow and red cap is a clear, widely accepted 'badge' of their occupation, yet only 50% of the students indicated that this was how they recognised lifesavers. However, a further 45% did state that a lifesaver would be wearing red, yellow or a combination of the two. The remaining 5% mentioned non-colour related identifiers such as ID, sunglasses, chairs, and rescue equipment. These results are encouraging as they clearly show red and yellow are colours associated with lifesavers. However, while this association is a step in the right direction, it could also contribute to a false sense of safety where visitors to the beach misidentify people as lifesavers based simply on the colour of their clothing. Thus, it is imperative that SLSA promote the caps as their badge of authority, and emphasise that this is the only reliable method of correctly identifying qualified lifesavers. A significant difference ($\chi^2=14.378$, $p=0.001$) was found between the domestic and international students in terms of how they recognised lifesavers. The data illustrated in Table 2 shows that 15% of the international students did not recognise lifesavers by their caps or the colours red and yellow compared to only 1% of the Australians.

Table 2. Identification of lifeguards (% in brackets)

	Domestic Students	International Students	Overall Student Sample
Red and yellow hat	58 (48)	18 (37)	76 (45)
Red and/or yellow clothes	63 (51)	23 (48)	86 (50)
Something else	1 (1)	7 (15)	8 (5)

Table 3. Understanding of what a yellow flag on the beach means (% in brackets)

	Domestic Students	International Students	Overall Student Sample
Safe to Swim	49 (43)	29 (64)	78 (49)
Dangerous conditions - be careful	58 (51)	13 (29)	71 (45)
Do Not Enter Water	2 (2)	1 (2)	3 (2)
Private Area	5 (4)	2 (4)	7 (4)

As Table 3 illustrates, students demonstrated a limited understanding of what the 'surf condition' flags mean. A large proportion of respondents (49%) incorrectly thought a yellow flag meant 'safe to swim', which is worrying as it actually means

'dangerous conditions'. A significant difference was found when the sample was divided into domestic and international students ($\chi^2=6.518$, $p=0.011$). Approximately half of the domestic students (51%) correctly said this flag indicates dangerous conditions, while most of the international students (64%) stated that a yellow flag means it is safe to swim. Similarly, Richards' (1997) found that more than half of her sample of international visitors did not know what the yellow flag means.

The red/yellow flags were more widely recognised; with all but one of the Australian students correctly stating these flags mark patrolled areas. In contrast, only 60% of the international students knew that the red/yellow flags denoted a safe area, while 13% stated they indicated a dangerous area. The high percentage of international students who were unfamiliar with the use of red/yellow flags contradicts the view of lifesavers that even international visitors recognise the area between these flags as a safe place to swim. It seems that international visitors, in particular, are generally unfamiliar with the beach safety flag system and, as a consequence, could be compromising their safety.

4. Conclusion

This research has identified some serious gaps in beach safety knowledge and practices, particularly amongst international students. It appears more education is required about issues such as where to swim at the beach, recognising and avoiding rips, understanding the Surf Lifesaving flag system, and identifying lifeguards/savers. While it is tempting to conclude that educational efforts should focus on international visitors, this study suggests that the attitudes, knowledge, and practices of Australians also need addressing. Of particular concern is the finding that even those who knew about safe beach practices did not necessarily operationalise this information, with a significant number of both domestic and international students stating they would swim in potentially dangerous areas despite being aware of the risks involved.

Risky behaviour, misconceptions and knowledge deficiencies need to be challenged through comprehensive, multi-lingual educational materials that are widely disseminated to local people, domestic and international visitors, temporary residents, and migrants. Indeed, SLISA (2002) have stated that there is a need to make programs and educational resources more accessible for the wider community. This will require a change in current general practices where accident prevention measures are not widely disseminated in the tourism industry (Page & Meyer, 1997). The public needs to be

educated about safe beach practices and encouraged to be more proactive in recognising danger signs and protecting themselves from adverse ocean conditions. Indeed, while surf lifesaving associations have been reasonably successful in promoting the importance of swimming between the flags, it seems further details on issues such as recognising rips and 'surf condition' flags may be timely. Another reason for the need to develop safety campaigns that make international and domestic visitors more proactive, in terms of ensuring their personal safety, is the recognition that most beaches in Queensland are not patrolled all year round and on many, surf lifesavers are only present at weekends.

This study highlights the importance of conducting research to ensure that safety education programs target knowledge gaps and reach 'at risk' sectors of the community. It is argued that the approach recommended by Protection Motivation Theory would be particularly suitable for designing and disseminating surf safety information. This theory suggests that education and safety warnings must highlight the personal threat individuals are under if they behave irresponsibly. It is based on the assumption that warnings/educational materials will only change behaviour if they build on a person's beliefs about potential threats and danger (Wilks & Atherton, 1994). Thus, educational materials such as signs should be available where risky behaviour is likely to occur (i.e., at entrances to popular beaches) and should clearly state possible risks. For example, educational materials could highlight that the threat is severe (e.g., use statistics on rescues and fatalities to emphasise the extent of the problem); that everyone is vulnerable; and that the threat can be significantly reduced by swimming in patrolled areas and vigilantly watching for signs of potential danger. The poor knowledge of rips demonstrated by participants in this study suggests that diagrams of these dangerous ocean currents should be included in all educational materials, together with advice on what to do if caught in a rip.

Improving safety education and practices amongst beach users faces four main obstacles. Firstly, behavioural change amongst tourists is difficult because it is widely accepted that members of this population are prepared, and more likely to, engage in risky behaviour while on holiday (Page & Meyer, 1997). Secondly, beaches are generally associated with fun, pleasure, and relaxation by people rather than potential danger and death. Consequently, there is a deeply engrained mindset that needs to be overcome in the case of beaches to facilitate education of the public about safe practices whilst at this type of space. Within the context of Australia there is also a need to overcome the fact that the country is generally regarded as a safe destination for international tourists

(Wilks & Oldenburg, 1995) in order to be able to effectively educate people about the risks associated with the country's beaches.

The third obstacle to improving safety education and practices amongst beach users is related to the tourism industry and beach-oriented holiday destinations marketing of the beach as a place for fun and relaxation. Although the industry and destinations may have a moral obligation to ensure the safety of beach users they may also be protective of beach images as ideal holiday locations. As a result, they may be averse to potentially damaging these images with the distribution of details and/or graphical representations of the dangers associated with beaches in Australia. The suggestion that the tourism industry may not wish to advertise potential dangers associated with visits to the beach stems from the recognition that peoples' perceptions and expectation of risk are likely to affect travel decisions (Clift & Page, 1996; Sonmez & Graefe, 1998). Peach and Bath (1999, pp. 68–69) provided support for this concept, suggesting that "possible reasons for the tourism industry not always providing health and safety information, particularly about specific areas such as the marine environment, are the tourism industry considering it bad marketing to acknowledge that some travellers may experience a problem." However, injuries and fatalities create bad publicity for Australian tourism, particularly if such incidents could have been prevented by providing appropriate safety information and education (Page & Meyer, 1996). The challenge, therefore, is to provide information in a manner that emphasises the promotion of visitors' health, safety and enjoyment (Hobson & Dietrich, 1994). The final obstacle to the effective education of beach users relates to the fact that most tourists are highly motivated by a desire to relax and escape their normal lives (Iso-Ahola, 1989; Dann, 1977; Crompton, 1979; Ryan, 1991). Consequently, they may not wish to be educated or have their picture of a relaxing holiday destination overlaid with images of danger and death.

As can be seen from the problems associated with educating beach users about the dangers present on Australia's beaches and getting them to operationalise safe practices a multi-dimensional educational policy is likely to be required. This policy will be required to educate not just beach visitors, but also the tourist industry and beach-oriented destinations of the benefits of visitor education and safe practice compliance. In addition, it will have to actively involve all beach interest/user parties in the creation and dissemination of beach safety educational material. This method may be defined as a form of public participation that empowers all of the beach interest and user groups in the creation, dissemination, and operationalisation of beach safety practices.

This research was not intended to provide recommendations of how safety information would be best disseminated. Rather, future research needs to identify if certain modes of information and dissemination are more effective with some sub-populations than others. Whether the use of graphic illustrations and scare tactics similar to those used in road accident and smoking prevention are appropriate for this particular purpose also needs to be addressed. It is important that research be conducted not only to see how information about beach safety may be most effectively transferred to tourists, but also how the operationalisation of this information can be increased. Further research is also required to assess whether Surf Lifesaving flags should be altered to use colours that may be less confusing to beach users and conform to other colour schemes such as those used in traffic lights.

While this paper has provided useful insights into the beach behaviour of the domestic and international student population in Australia, it is acknowledged that a specific sub-population was sampled, and thus findings may not mirror the knowledge, attitudes, and/or behaviour of the general population that visits Australia's beaches. However, as a result of the heterogeneous nature of the student population and the overlaps that exist between it and other populations, it may be hypothesised that the results of this study could be expanded to the general population. In order to test the validity of this hypothesis it is important that this research be expanded to encompass all segments of the international and domestic populations visiting Australia's beaches. In addition, a broader cross-cultural study of beach visitors' behaviour and awareness of safe practices needs to be conducted to more accurately assess which international visitors are most 'at risk'.

References:

Australian Water Safety Council, 1998. *National water safety plan*. Australian Water Safety Council, Sydney.

Bigby, K., McClure, R. and Green, A., 2000. The incidence of inflatable rescue boat injuries in Queensland surf lifesavers. *Medical Journal of Australia* 172, pp. 485–488.

Bohm, A., Davis, D., Meares, D. and Pearce, D., 2002. *Global student mobility 2025: forecasts of the global demand for international higher education*. IDP Education, Canberra, Australia.

Borozne, J., Morehouse, C. and Pechar, S., 1977. *Safety in aquatic activities*. AAHPER Publications, Washington.

Chadee, D. and Cutler, J., 1996. Insights into international travel by students. *Journal of Travel Research* 35 2, pp. 75–80.

Clift, S. and Page, S.J., 1996. Introduction: tourism and health. In: Clift, S. and Page, S., Editors, 1996. *Health and the international tourist*, Routledge, London.

Crompton, J., 1979. Motivations for pleasure vacation. *Annals of Tourism Research* 6, pp. 408–424.

Crook, R., 2000. *Surf safe summer topline results 2000*. Research International Australia, Sydney.

Dann, G., 1977. Anomie, ego-enhancement and tourism. *Annals of Tourism Research* 4 (4), pp. 184–194.

Glesne, C. (1999). *Becoming qualitative researchers: An introduction* (2nd ed.). Harlow: Longman.

Hobson, J.S.P. and Dietrich, U.C., 1994. Tourism, health and quality of life: Challenging the responsibility of using the traditional tenets of sun, sea, sand and sex in tourism marketing. *Journal of Travel & Tourism Marketing* 3 (4), pp. 21–38.

Iso-Ahola, S., 1989. Motivation for leisure. In: Jackson, E. and Burton, T., Editors, 1989. *Understanding leisure and recreation: Mapping the past, charting the future*, Venture Publishing, Inc, State College, PA, pp. 281–302.

Kitchin, R. and Tate, N., 2000. *Conducting research in to human geography*. Prentice Hall, Harlow.

Lin, C., Endler, N.S. and Kocovski, N.L., 2001. State and trait anxiety: A cross-cultural comparison of Chinese and Caucasian students in Canada. *Current Psychology* 20 1, pp. 95–112.

Locke, K., 2001. *Grounded theory in management research*. SAGE Publications, London.

Manolios, N. and Mackie, I., 1988. Drowning and near drowning on Australian beaches patrolled by lifesavers: A 10-year study, 1973–1983. *The Medical Journal of Australia* 148, pp. 165–171.

Page, S.J. and Meyer, D., 1996. Tourist accidents: An exploratory analysis. *Annals of Tourism Research* 23 (3), pp. 666–690.

Page, S.J. and Meyer, D., 1997. Injuries and accidents among international tourists in Australasia: scale, causes and solutions. In: Clift, S. and Grabowski, P., Editors, 1997. *Tourism and health: risks, research and responses*, Pinter, London.

Peach, H.G. and Bath, N.E., 1999. Visitors without health and safety information in North Queensland: Extent of the problem. *The Journal of Tourism Studies* 10 (2), pp. 62–69.

Pizam, A. and Sussmann, S., 1995. Does nationality affect tourist behaviour? *Annals of Tourism Research* 22 (4), pp. 901–917.

Priest, E., 1977. Causes and prevention of aquatic accidents. In: Borozne, J., Morehouse, C. and Pechar, S., Editors, 1977. *Safety in aquatic activities*, AAHPER Publications, Washington.

Richards, F. (1997). *Beach visitation and health and safety awareness*. Unpublished Honours thesis, James Cook University.

Ryan, C., 1991. *Recreational tourism: a social science perspective*. Routledge, London.

Sirakaya, E. and McLellan, R., 1997. Factors affecting vacation destination choices of college students. *Anatolia* 8 (3), pp. 31–44.

Sonmez, S.F. and Graefe, A.R., 1998. Determining future travel behaviour from past travel experience and perceptions of risk and safety. *Journal of Travel Research* 37, pp. 171–177.

Surf Life Saving Australia (2002). *Annual Report*, <http://www.slsa.asn.au>.

Surf Life Saving Queensland (2000). <http://www.lifesaving.com.au>.

Thygerson, A. (1976). *Safety: concepts and instruction* (2nd ed.). New Jersey: Prentice-Hall.

Tourism Queensland (2003). <http://www.tq.com.au>.

Wilks, J. and Atherton, T., 1994. Health and safety in Australian marine tourism: A social, medical and legal appraisal. *The Journal of Tourism Studies* 5 (2), pp. 2–16.

Wilks, J. and Oldenburg, B., 1995. Tourist health—the silent factor in customer service. *Australian Journal of Hospitality Management* 2 (2), pp. 13–23.