Preface and Acknowledgements

This report is the culmination of a collaborative project between the Faculty of Education of The University of Auckland, Surf Lifesaving New Zealand (SLSNZ) and WaterSafe Auckland Incorporated (WAI).

The study was set up in response to concerns raised by surf lifeguards and regional water safety groups about the lack of quality supervision of young children by parents/caregivers during aquatic recreation at beaches, especially on beaches with the added risk of surf conditions.

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Conflict of Interest Statement
All members of the research team involved in the conducting the project and in the production of the Report are/were employed by universities or organisations that they are/were affiliated with.

Disclaimer
This report should only be used for the purposes for which it was commissioned. If it is proposed to use this report for a different purpose or in a different context from that intended at the time of commissioning the work, then the author, on behalf of the participating organisations should be consulted to verify whether the report is being correctly interpreted. In particular, it is requested that, where quoted, conclusions given in the report should be stated in full.

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Further copies of the report are available in PDF format on the website of Watersafe Auckland at:
http://www.watersafe.org.nz

Executive Summary

1. Background

The Faculty of Education of the University of Auckland, Surf Life Saving New Zealand (SLSNZ) and WaterSafe Auckland Inc (WAI) jointly initiated this project to address concerns among surf lifeguards and others that some parents/caregivers were failing to provide quality supervision of young children in their care at beaches. A multiple drowning incident involving would-be rescuers of a 7-year-old boy at a city, flat-water beach raised the issue of water safety supervision in the public arena.

2. Objectives

The specific objectives of the study were:

1. **Observe the supervisory behaviour of parents/caregivers while the young children in their care were playing in or near the water at the beach**
2. **Ascertain the water safety skills and knowledge of parents/caregivers with regards to the potential dangers of water activity at the beach especially for their young children**
3. **Ascertain parental/caregiver perceptions of the risk of child drowning at the beach and their beliefs about their role in its prevention**
4. **Make recommendations and suggest strategies that enhance parental/caregiver understanding and practice of supervision of young children while engaged in water play at the beach.**

3. Methods

A cross sectional study of parents/caregivers who were in charge of young children aged 9 years or less at 18 popular Auckland, Northland and Bay of Plenty surf and flat-water beaches was conducted between January and March 2007. A sample of 769 parents/caregivers completed a written questionnaire that assessed parent/caregiver and child swimming abilities and parent/caregiver supervisory behaviours and perceptions of drowning risk.

4. Key Findings

4.1 Participant demographics:

- **More females than males (females 58%, males 42%) completed the questionnaire**
- **Proportionally more European and other ethnicities took part than Maori, Pasifika or Asian peoples**
- **Almost one third (32%) of the social groupings contained only one adult and more than one child**
- **For one fifth (19%) of beachgoers it was their first visit to that beach**

- **Almost half (44%) of the beachgoers had visited that beach location less than 6 times**
- **Slightly more than one third (37%) were regular visitors to the beach where they were interviewed (i.e. had been >20 times)**

4.2 When children were in the water:

- **One quarter (24%) of children were not adequately supervised**
- **Most supervision (74%) was done by a single person irrespective of the number of children in the water**
- **A small proportion (3%) were being supervised by other children**
- **Most supervised children (62%) played in the water in groups of 2-3 under the supervision of a single adult**
- **Of the 130 parents/caregivers failing to provide adequate supervision, one third (30%) lay on the beach sunbathing, one quarter (28%) talked to other people and one quarter (27%) used cell phones. Lesser occurring distractions included reading (7%), eating/drinking (11%) and drinking alcohol (3%)**

4.3 In terms of parent/caregiver water safety skills:

- **One fifth (22%) of parents/caregivers estimated that they could not currently swim non-stop for 100 m in open water**
- **More females than males estimated that they could not swim 100 m (females 29%, males 11%) and expressed anxiety about having to perform this task (females 47%, males 18%)**
- **Most parents/caregivers (90%) thought that they could stay afloat in deep water 20 m offshore without support**
- **Twice as many females than males felt anxious about performing this flotation task (females 42%, males 19%)**
- **Less than half of participants (48%) reported having been certified in CPR**
- **Less than one quarter of parents/caregivers (24%) reported having received rescue/lifesaving training**
- **Although there were no differences in the amount of rescue/lifesaving training between males and females, more males were confident of their ability to rescue their children if required (males 73%, females 44%)**
- **Asian and Pasifika parents/caregivers were more likely than others to have poor swimming, flotation and CPR/rescue skills**

4.4 In terms of children's swimming ability:

- **Parents/caregivers reported that more than one third (37%) of under 5-year-olds had not received swim lessons but this had dropped to 13% of 5-9-year-olds**
- **Almost two thirds (64%) of parents/caregivers considered their children aged less than 5 years to be non- or weak swimmers with no differences between male and females estimates**
- **Most adults (57%) considered their 5-9-year-olds to be good swimmers**

- **Significantly more males than females estimated their 5-9-year-old children to be good swimmers (males 66%, females 50%)**
- **No differences were found when under 5-year-olds experience of swimming lessons or estimates of swimming competency were analysed by ethnicity**
- **Parents/caregivers of European and 'other' ethnic backgrounds were most likely to report swimming lessons for their 5-9-year-olds**
- **More Asian parents/caregivers than European, Maori, Pasifika and 'other' ethnicities classified their children as *non-swimmer* or *weak swimmer* (70% compared with 40%, 32%, 37% and 32% respectively)**
- **Most European, Maori and 'other' ethnic group parents/caregivers classified their children as *good swimmers* (57%, 64%, and 63% respectively)**

4.5 In terms of parental/caregiver perceptions of child drowning risk:

- **Most parents/caregivers estimated slight or no drowning risk for both age groups (under 5's, 60%: 5-9 year olds, 82%)**
- **One fifth of parents/caregivers considered the drowning risk for their under 5's to be *extremely risky* (20%) or *very risky* (19%)**
- **Significant differences were evident among male and female when estimating the drowning risk for the older age group with twice as males than females likely to estimate *no risk* (males 37%, females 18%)**
- **No significant differences were found in parents/caregivers' estimates of risk of drowning at the beach for their children when analysed by ethnicity**

4.6 In terms of parental/caregiver perceptions of supervision:

- **For the under 5-year-olds, most parents reported that they stayed close to their children in the water (71%)**
- **Almost one quarter of parents/caregivers reported that they watched them constantly from the beach (23%)**
- **For the older 5-9 years age group, the pattern of supervision changed with watching them constantly from the beach being the most frequently reported supervisory behaviour (46%)**
- **No significant differences were found between males and females with regard to supervision of their children in either age group**
- **A shift in behaviour from staying close to them in the water to watching them constantly from the beach in the older age group was consistent for both male and females participants**
- **Two thirds (66%) thought that parents/caregivers were best supervisors**
- **Slightly less than a quarter (22%) believed that lifeguards were best able to supervise their children**
- **More females than males thought parents/caregivers were best able to supervise (females 72%, males 57%)**
- **Fewer Pasifika (47%) and Asian (41%) parents/caregivers thought that parents/caregivers were best able to supervise their children**

- **More Pasifika (41%) and Maori (30%) parents/caregivers considered that lifeguards were best able to supervise their children**

5. Recommendations

In light of these findings, several recommendations are made. These are:

1. Parents/caregivers responsible for young children at the beach need to:

- **Adopt safe supervision practices that minimally require close and constant attention at the water's edge even in calm and seemingly benign conditions**
- **Be prepared to move to their children if they move away from your close reach**
- **Instruct children to retain close contact especially in moving water**
- **Keep children close together if supervising more than one child and limit activity if conditions and abilities make close contact with all children difficult**
- **Be aware of the difficulties of watching groups of children; get other adults to help supervise and distribute responsibility so that every child is covered**
- **Do not over-estimate their ability to respond to an emergency rescue situation**
- **Do not under-estimate the drowning risk to young children at beaches, even in calm conditions**
- **Do not assume that lifeguards can safely watch over their children without their close and constant supervisory assistance**
- **Be prepared to react to changing conditions by observing surf conditions, checking tides and currents, checking flags and landmarks**
- **Ask a lifeguard for advice if unsure about conditions or how best to supervise their children**
- IF IN DOUBT, KEEP YOUR CHILDREN OUT!

2 Surf Life Saving organisations need to:

- **Make lifeguards aware of the findings of this survey especially in relation to presumptions about the safety of young children apparently under close and constant supervision, the supervisory skills of parents/caregivers and the 'safety in numbers' notion of children swimming in groups**
- **Develop scanning and vigilance techniques specifically designed to monitor young children in light of the findings of this study**
- **Promote public safety messages about quality supervision aimed specifically at adults in charge of youngsters at beaches that also stress the need for partnership with lifeguards in order to ensure maximum protection of young children**
- **Positively reinforce good caregiver practice when observed on patrols**

3 Water safety organisations, national, regional and local authorities need to:

- **Develop guidelines for safe supervision of young children at beaches**
- **Promote safe supervision guidelines through resource development and dissemination through media campaigns targeting family groups at beaches**
- **Make explicit the dangers of young children's unsupervised swimming at beaches, especially non-patrolled surf beaches**
- **Promote swimming and other emergency skills among all caregivers**
- **Erect multi-lingual signage at all popular family beaches indicating site-specific dangers and emergency instructions**

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1. Background

New Zealand has an unenviable reputation among the OECD countries of having one of the highest incidences of death by drowning among young children. One of the persistent risk factors identified in almost all child drowning tragedies is the lack of adult supervision (Cody, Quraishi, Dastur, & Mickalide, 2004). In New Zealand, the risk of drowning posed by the perceptual, cognitive and physical immaturity of childhood is exacerbated by high frequency of risk exposure in an aquatically-oriented society with easy access to water (Moran & Stanley, 2006a). In the 1-14 year age group drowning is the second leading cause of injury death after motor vehicle incidents (Child and Youth Mortality Review Committee [CYMRC], 2005). While the circumstances surrounding child drowning are similar to those reported in other developed countries, the drowning rate for this age group in New Zealand is almost 50% higher than its nearest neighbour Australia (Langley, Warner, Smith, & Wright, 2000).

Research into swimmers' attitudes and behaviours is a fundamental component of the National Drowning Strategy 2005 – 2015 and is vital in the development of effective primary prevention initiatives to reduce the incidence of drowning in New Zealand (Accident Compensation Corporation [ACC], 2005). Evidence-based educational research is an important task to undertake in order to achieve greater awareness of the risks of swimming at the beach (as in other aquatic environments) and to increase knowledge of key water safety skills, especially the beliefs and behaviours associated with supervision of young children by adult caregivers when children are in or around water.

While most young children aged 5 years and under drowned in the home environment, the number of children who drown at open-water locations such as surf beaches and waterways increases with age. Between 1980-2002, 34% of 1-4-year-old toddlers (n=110) drowned in open water locations compared with 70% of 5-9-year-olds (n=71) (CYMRC, 2005). However, while most studies of child drowning have focused on risk factors in the home environment, little is known about parental supervisory practices of young children in open-water environments such as flat-water and surf beaches.

Observational studies of victims at flat-water beaches suggest that non-swimming adults out of their depth in water are generally unable to struggle on the surface for more than one minute, whereas infants and young children can submerge in as little as 20 seconds (Pia, reported in Branche & Stewart, 2001). Furthermore, adults and especially

children are rarely able to call for help or attract attention when in distress in the water. These characteristics of drowning, referred to by Pia (1971) as the Instinctive Drowning Response, mean that continuous surveillance and immediate reaction is critical to the prevention of drowning at beaches, especially among the young who are more likely to lack the pre-requisite survival skills required of sudden exposure to deep and often turbulent water conditions. Such environmental hazards as waves, inshore currents, rips, tides and choppy conditions, as well as cold water and wind-chill-inducing winds are commonplace at many popular New Zealand beaches. Such conditions heighten the risk of drowning by adding the debilitating effects of hypothermia, 'sudden immersion syndrome' and 'wave splash' to the downward spiral of respiratory failure that is drowning (Golden & Tipton, 2002). In such hazardous conditions, child survival times without adult support are likely to be very much reduced.

In New Zealand (and many other OECD countries including Australia, Britain and the US), flat-water beaches are often perceived to be 'safe' and so professional surveillance via lifeguard services is often unavailable. In such conditions, a premium is often placed on parents and other caregivers to provide young children with the necessary protection in the event of unintentional submersion. Examples of the tragic consequences of failure to provide such supervision are all too common. In a 2004 multiple drowning at a flat-water Auckland beach, two siblings and an onlooker aged 7, 16 and 59 years respectively, drowned while attempting to rescue a 7-year-old boy who had got into difficulty in calm conditions (New Zealand Police News Release, 20th January, 2004). One summer season previously, a 74-year-old had drowned while attempting to rescue two children who had got into difficulty at the same flat-water beach (New Zealand Herald, 1st December. 2002).

Worldwide, a lack of appropriate adult supervision has been identified in most childhood drowning incidents. In Canada, a study of toddlers aged 1-4 years found that only 5% of toddler drowning incidents occurred in the presence of adults and concluded that adult supervision was critical to the safety of toddlers around unprotected waters (The Canadian Red Cross, 1994). In Australia, a New South Wales study on drowning in children aged 5 years and under found that supervision was a factor in all but two cases of drowning in bodies of natural water, with around half of all children being without any adult supervision and the remainder being indirectly supervised by an adult (New South Wales Water Safety Taskforce, 2002). A national study of childhood drowning in the United States reported that 88% of children were under some form of supervision when

they drowned. Of these, 46% of victims were in the care of a parent, 26% were in the care of a relative, 6% were in the care of a grandparent and 5% were in the care of a sibling under the age of 18 years at the time of the incident (Cody, Quraishi, Dastur, & Mickalide, 2004**)**. They also found that 10% of victims were completely unsupervised at the time of drowning and that the majority (79%) of these children were aged 5-14 years.

Not surprisingly, in response to the unacceptably high rates of drowning among young children, many organisations have promoted the necessity of close and constant adult supervision of young children around water (for example, American Academy of Pediatrics [AAP], 2000; Centres for Diseases Control and Prevention [CDC] 2004; Safekids USA, 2004). Educational campaigns have used such catch phrases of 'touch supervision', 'within arm's length' and 'in sight, in reach' to promote the necessity of best supervisory practice. However, an apparent lack of understanding of the necessity of close and constant supervision of young children by adults prompted Moran and Stanley (2006a) to examine parental perceptions of toddler water safety and drowning prevention. In a study of 882 parents whose children attended swim school lessons or early childhood centres, they found that parents had an overly optimistic view of the role of swimming ability in preventing toddler drowning. Alarmingly, one third of parents (33%) believed that it was better to develop toddler swimming ability rather than rely on adult supervision. As a consequence, Moran and Stanley recommended that greater parental supervision, especially after swim lessons, might counter any increased threat to life as a consequence of possible child or parent over-confidence. Ways of enhancing parental understanding of the need for close supervision of children around water in association with toddlers in-water lessons have recently been reported (Moran & Stanley, 2006b).

Anecdotal evidence from surf lifeguards suggests that some parents do not maintain close and constant supervision of their young children when playing in the surf, perhaps in the mistaken belief that surf lifeguards will provide the necessary supervision when swimming between the flags. However, because drowning can occur quickly and quietly, it is not surprising that surf lifeguards, charged with the responsibility of surveilling hundreds of surf swimmers often in boisterous conditions, may not always be able to provide either constant, close surveillance or an immediate response to young children getting into difficulty in the water. Even though lifeguard supervision is well recognized as a highly effective intervention in drowning prevention (Branche & Stewart, 2001), some evidence suggests that lifeguard scanning efficiency decreases in busy conditions, in the presence of other lifeguards and late in the day (Harrell, 2001, 2003, 2006). Others

have suggested that the repetitive nature of scanning, often in hot and challenging weather conditions and the relative infrequency of the necessity for lifeguard intervention may also contribute to risky situations being overlooked (Wolfe, Horowitz, & Kenner, 2005). Furthermore, earlier work by Harrell (1995) also suggests that lifeguards are less inclined to pay attention to groups of children in the belief that there is safety in numbers and that they are less inclined to scan where adult caregivers appear to be in close proximity. The close and constant supervisory role of the parent/caregiver thus becomes paramount in the drowning prevention chain for youngsters at the beach.

2. Purpose and Outcomes of the Study

It is the purpose of this study to gain a greater understanding of parental practice and perceptions of supervision of children when playing in the water at the beach and to ascertain, through questionnaire survey, what parental beliefs about toddler water safety inform their supervisory actions. The study included parents/caregivers in charge of young children less than nine years of age at both patrolled and non-patrolled beaches and in flat water as well as surf conditions. It is hoped that this study will, firstly, provide clear direction to parents and caregivers responsible for young children at beaches about their role in the supervision of water safety at the beach. Secondly, it is hoped to assist lifeguards in their task of safely guarding their beaches by making them more aware of parent attitudes and supervisory practices. Thirdly, it is hoped that the study will provide water safety organisation with an evidence base for the targeted promotion of parent water safety education in order to make beaches safe environments for one of the most vulnerable of age groups around water.

Specifically, the survey had four outcomes. They were to:

1. Observe the supervisory behaviour of parents/caregivers while the young children in their care were playing in or near the water at the beach
2. Ascertain the water safety skills and knowledge of parents/caregivers with regards to the potential dangers of water activity for their young children at the beach
3. Ascertain parental/caregiver perceptions of the risk of childhood drowning at the beach and their beliefs about their role in its prevention
4. Make recommendations and suggest strategies that enhance parental/caregiver understanding and practice of supervision of young children while engaged in water play at the beach.

3. Methods

3.1 Preliminary Organisation

The Faculty of Education Research Committee of the University of Auckland provided initial funding support to set up the study. They also awarded a summer scholarship to a graduating Bachelor of Physical Education student with surf lifesaving experience to undertake summer work as a research assistant. Surf Life Saving New Zealand (SLSNZ) also provided logistical support by funding a summer scholarship that was awarded to a third year medical student with a surf lifesaving background. Uniforms with which to identify the research assistants when working on the beaches were also supplied by SLSNZ. Initial meetings of the research team established the parameters and protocols of the study and devised a draft questionnaire. Water safety experts within the participating organisations critiqued the draft questionnaire in order to establish content validity and feasibility of the proposed beach survey. Draft questionnaires were subsequently modified and pilot tested in public and among surf lifesaving patrols prior to the main survey. The proposed study was submitted for ethics approval to the University of Auckland Human Ethics Committee and subsequently approved (Ref. 2007/Q/005).

3.2 Study Design

A cross-sectional survey of people who used public beaches throughout the upper North Island, which included the metropolitan and west coast beaches of Auckland, and popular holiday beaches in Northland and the Bay of Plenty, was conducted during the late summer period of 2007. Participants were invited to complete a brief self-complete questionnaire that included the following socio-demographic measures: gender, ethnic group, number of children and social relationship with children in their care. Water safety-related factors measured included: self-estimated swimming and rescue ability, swimming ability of their child or children, supervisory behaviours around water, perceptions of risk of drowning to themselves and their children. The survey data gathering took place during 8 weekends and public holidays between January and March in the summer of 2007. This included several peak holiday weekends and it was anticipated that this period would provide an ideal timeframe to reach as many of the beach-going population as possible.

3.3 Sample

A total of 18 surf and flat-water beaches were purposively sampled to generate a sample of New Zealand's beach-going population. The beaches were selected because of their popularity and proximity to major urban concentrations of population. The sample population included all people over the age of 16 years who were accompanied by young children and on the beach at the time the research assistants were conducting the field work. Young children were defined by estimate as being aged 9 years or less. People who were unable to comprehend written English were excluded from the study. Data on the approximate number of people on the beach and reasons for declining to take part in the study were not systematically recorded. Subjective assessments by research assistants suggested that reasons for not taking part included invasion of private time, lack of written or language skills or inappropriate timing. Research assistants arrived at each beach between 10am and 11am each day and stayed on the beach until at least 4pm. The sample did not therefore include social groups containing children who frequented the beach on weekdays outside of holiday times and times outside 'peak' hours.

3.4 Measures

The structured questionnaire (See Appendix 1) was anonymous, designed to be completed on site and take a maximum of 10 minutes to complete. The questionnaire consisted of 21 closed questions that included a range of pre-validated and new measures designed to assess the socio-demographic variables of the beachgoers with children, their frequency of beach use, their swimming ability and that of their children, their ability to rescue their child, their perception of drowning risk for themselves and the children in their charge, and their supervisory behaviours.

Five introductory questions sought demographic information on gender, ethnicity, number of children, relationship with child/children and frequency of visits to the beach where interviewed. The survey included 7 questions that required yes/no responses as to whether respondents could swim, perform a rescue or CPR with follow-up questions that asked for how they felt about performing these tasks using four response categories that included *very comfortable, comfortable, anxious*, and *very anxious* (See Survey questions 6-12, Appendix 1). Similar questions and response categories had previously been used in a study of Dunedin youth water safety behaviour (Gulliver & Begg, 2005). Four questions, two for each age group of under 5 and 5-9-year-olds, focused on whether their child/children had had swimming lessons and a follow-up question then asked

respondents to describe their child's swimming ability using four ability categories including *don't know, non swimmer, weak swimmer* or *good swimmer* (See survey questions 13, 14 and 17, 18, Appendix 1). Two questions focused on parental/caregiver perceptions of the risk of drowning for their child/children at the beach on the day of the survey using a categories that included *extremely risky, very risky, slightly risky, no risk* and *don't know* (See survey questions 15 and 19, Appendix 1). Three concluding questions sought information on parental/caregiver perceptions of water safety supervision of children at the beach (See survey questions 16, 20 and 21, Appendix 1).

3.5 Procedures

A team of research assistants (n = 3) was trained to conduct all aspects of the fieldwork process from data collection to data inputting. To ensure consistent and accurate inputting of the data onto what was anticipated to become a very large database, one assistant with data handling experience took responsibility for inputting all data received from the completed surveys collected by the other research assistants. The two research assistants assigned to collect data on the beaches had experience of dealing with the public through their professional teaching and medical training and, in addition, both had extensive knowledge of beach safety from their considerable surf lifesaving experience.

Initially the two beach research assistants worked together on beaches in order to ensure consistency of observations and data gathering procedures. Interviewers were trained to initially observe adult beachgoers' arrival at the beach, note the composition of their social group and the number of children less than 9 years of age in their charge, as well as their supervisory actions when children went into the water. They were also trained to approach adult beachgoers on the beach and invite them to participate in an anonymous survey about beach water safety. Interviewers wore official apparel and nametags from Surf Life Saving New Zealand and, if asked, identified themselves as working as research assistants in a joint project on behalf of Surf Life Saving New Zealand, the University of Auckland and WaterSafe Auckland. Participation in the survey was voluntary and anonymous.

Privacy and confidentiality of participants could not be guaranteed because of the public nature of the setting in which the survey was conducted and this was stated in the Participant Information Sheet (See Appendix 2). The research assistants were trained to address any issues that might arise from completing the questionnaire and information

sheets were offered to all potential participants to help explain the purpose of the study. Questionnaires were systematically distributed along successive sections of the beach and collected from participants shortly after. Overall the questionnaire was well received with very few respondents requiring clarification or additional assistance in order to complete the questions. The questionnaires were later stored in a locked file before being sent to the delegated data input assistant for data entry and electronic storage in a Microsoft Excel X data file.

3.6 Data Analysis

Data from the completed questionnaires were entered into Microsoft Excel X for statistical analysis using SPSS Version 14.0 in Windows. Descriptive statistics such as means and proportions were used to describe the baseline characteristics of the beach-going parents and caregivers. Frequency tables were generated for all questions and, unless otherwise stated, percentages are expressed in terms of the number of respondents to each survey question within groups. Data were analysed using a number of socio-demographic variables including gender and ethnicity. While recognizing the limitations of agglomerating several peoples into one category (Rasanathan, Craig, & Perkins 2004), for the purpose of comparisons by ethnicity, ethnic groupings were broadly based on Statistics New Zealand classification and included European, Maori, Pasifika, Asian and a category for those who self-identified as of other ethnicities than those specified**.** Chi-square tests were used to determine significant differences between independent variables (such as gender and ethnicity) and dependent variables (such as swimming ability and risk perception).

3.7 Definition of Terms

The following operational definitions apply to this study:

- **Water safety supervision** - close and constant attention to the water safety of young children without distraction. Best practice of water safety supervision requires the supervisor to be aware of, and be able to respond effectively to, the risks associated with water hazards such as surf, water depth, tide and currents as well as prevailing weather conditions such as cold and wind that may place a child at risk of drowning in or near the water at the beach.

- **Parent/caregiver beachgoers** - those adults deemed to be responsible for the welfare of young children in their care aged 9 years or less who engaged in water activity at the beach.
- **Water activity** - any activity undertaken by children under 9 years of age at or near the water's edge. It may include activity such as sand-castle building that does not have water immersion as a primary part of the activity but takes place close enough to the water's edge to warrant protection from incoming tides, surf sweeps or other sudden exposure to drowning risk.

Key Points

The survey:

- Took place in 18 popular flat-water and surf beaches in the Auckland, Northland and Bay of Plenty regions of the North island of New Zealand
- Included all adults in charge of children at the selected beaches
- Consisted of a 21-question, self-complete, written questionnaire
- Took place during weekends and public holidays in the late summer of 2007
- Was administered by experienced lifeguards trained to observe caregiver supervisory behaviour and assist participants to complete the survey

4. Key Findings

The results of the survey are presented in six related sections.

4.1 Demographics of Parent/Caregiver Beachgoers

All parents/caregivers observed with young children at the sites chosen to survey were invited to take part in the survey. Of the 865 adult beachgoers invited to participate in the study, 775 agreed to complete the questionnaire and 95 declined, a response rate of 89%. Of the 775 questionnaires returned, 6 were uncompleted or incorrectly completed and were excluded from the data analysis. Thus, the final database for this study included 769 adults in charge of children aged 9 years or less who completed a self-written survey while at one of 18 popular beach locations in the north of the North Island during the late summer of 2007. Of these, the majority of surveys were completed at surf beaches (62.8%; *n* = 483), the remainder being completed at flat-water beaches (37.2%; *n* = 286).

Table 1. ***Demographic Characteristics of Sample***

Demographic Characteristic		***n***	***%***
Beach location	Surf beach	483	62.8
	Flat-water beach	286	37.2
Gender	Male	324	42.1
	Female	445	57.9
Ethnicity	European	491	63.9
	Maori	108	14.1
	Pasifika	34	4.6
	Asian	37	4.8
	Other	97	12.6
Frequency of visits to the beach where surveyed	First time	142	18.5
	2-5 times	198	25.7
	6-10 times	82	10.7
	11-20 times	62	8.1
	> 20 times	285	37.0
	Total in Sample	769	100.0
Number of children	Under 5 years	703	44.6
	5-9 years	875	55.4
	Total in Sample	1578	100.0
Social groupings	1 adult, 1 child	60	11.4
	≥ 2 adults, 1 child	61	11.5
	1 adult, ≥ 2 children	170	32.2
	2 adults, ≥ 2 children	159	30.1
	≥2 adults, ≥ 2 children	78	14.8
	Total in Sample	528	100.0

Table 1 shows that for almost one fifth (19%) of beachgoers it was their first visit to that beach location; a quarter (26%) had visited the beach between 2-5 times. That almost one half (44%) of the caregivers had visited the beach at which they were interviewed less than 5 times may have ramifications on the effective supervision of children's water activity because it suggests that caregivers may not be familiar with local beach and water conditions. One fifth (19%) had visited between 6–20 times and slightly more than a third (37%) had visited the beach more than 20 times.

As Table 1 shows, the beach-going family/social groups consisted of slightly more females than males and proportionally more European (63.6%) and peoples of other ethnicities (12.6%) than Maori (14.1%), Pasifika (4.7%) and Asian peoples (4.8%) when compared with the national norms (refer Statistics New Zealand website for 2006 Census details).

Of the 1,578 children observed at the beach, slightly less than half (45%) were under 5 years of age (See Table 1). Not all children recorded as being present at the beach were observed taking part in aquatic activity (See Table 2 for children observed taking part in supervised/unsupervised water activity, $n = 544$). Of the 528 social groupings that were identified within the study, slightly less than one quarter (23%) had one child in their care, one third had a single adult looking after 2 or more young children and just under half (45%) consisted of two or more adults looking after two or more young children.

Key Points

Of the family/social groups that took part in the study:

- **769 adult beachgoers in charge of children at 18 popular North Island beaches successfully took part in the survey**
- **More females than males (females 58%, males 42%) completed the questionnaire**
- **Proportionally more European and other ethnicities took part than Maori, Pasifika and Asian peoples**
- **Almost one third (32%) of the social groupings contained only one adult and more than one child**
- **For one fifth (19%) of beachgoers it was their first visit to that beach**
- **Almost half (44%) of the beachgoers had visited that beach location less than 6 times**
- **Slightly more than one third (37%) were regular visitors to the beach where they were interviewed (i.e. had been > 20 times)**

4.2 Observation of Parent/Caregiver Supervision

The research assistants were trained to assess the appropriateness of observed parent/caregiver supervisory behaviour when their young children were in the water. Table 2 shows that, of the 544 observations made, one quarter of adults (24%; *n* = 130) were not considered to be providing adequate supervision of their children for the prevailing water conditions.

The research assistants also noted the distractions that reduced the adequacy of the close and constant supervision among those who were deemed not to be providing appropriate supervision. Six distracters to close and constant supervision were observed occurring 175 times by the research assistants. Of those not at the water's edge supervising their children (*n* = 130), almost one third (30%; *n* = 39) spent their time lying down on the beach sunbathing and more than one quarter (28%; *n* = 36) talked to other people or used cell phones (27%; *n* = 35). Other distracters observed among parents/caregivers not providing adequate water safety supervision were eating or drinking activities (11%, *n* = 14), reading books or magazines (7%; *n* = 9), drinking alcohol (3%; *n* = 4) and other unspecified activities (29%; *n* = 38).

Table 2. ***Observed Supervisory Behaviours***

Observed Supervisory Behaviours		***n***	***%***
Appropriateness of supervision	Adequate supervision	414	76.1
	Inadequate supervision	130	23.9
	Total	544	100.0
Supervisor	Female adult	173	41.8
	Male adult	131	31.6
	Non-adult	12	2.9
	>1 adult	98	23.6
	Total	414	100.0
Size of child groups being supervised in the water	I child	130	31.4
	2 children	190	45.9
	3 children	66	15.9
	4-10 children	28	6.8
	Total	414	100.0

Of those who were observed providing appropriate supervision of water activity (76%; $n = 414$), females were the most frequently-observed, single supervisors (42%; $n = 173$). One third of single supervisors were adult males (32%; $n = 131$), a small proportion were non-adults under the age of 16 years (3%; $n = 12$) and one quarter of supervision was undertaken by more than one adult (24%; $n = 24\%$). Table 2 shows that the number of children together in the water under the supervision of adults varied from 1-10 children. One third (31%; $n = 130$) of those observed being supervised were single children, groups of two children made up almost half of the supervised groups (45%; $n = 190$) and groups of three children accounted one sixth (16%; $n = 66$) of supervised children. Less than 10% of children (7%; $n = 28$) were being supervised in groups that varied in size from 4-10 and in all these cases there were multiple adult supervisors.

No significant differences were observed in either the provision of close and constant supervision or the number of children in the water under supervision when analysed by beach location (See Table 2a, Appendix 3). However, significant differences (χ^2 [4, $N = 437$] = 18.144, $p = 0.001$) were observed in the gender of supervisors with more females than males likely to provide close supervision at flat-water beaches (females 52%; males 22%).

Key Points

When children were in the water:

- **One quarter (24%) of children in the water were not adequately supervised**
- **Most supervision (74%) was done by a single person irrespective of the number of children in the water**
- **A small proportion (3%) were being supervised by other children**
- **Most supervised children (62%) played in the water in groups of 2-3 under the supervision of a single adult**
- **Of the 130 parents/caregivers failing to provide adequate supervision, one third (30%) lay on the beach sunbathing, one quarter (28%) talked to others, one quarter (27%) used cell phones. Lesser occurring distractions included eating/drinking (11%), reading (7%) and drinking alcohol (3%)**

4.3 Water Safety Skills of Parents/Caregivers

Respondents were asked to estimate their swimming, rescue and resuscitation abilities and to indicate their levels of confidence in these abilities.

Figure 1. Can you swim 100 m non-stop in open water? -

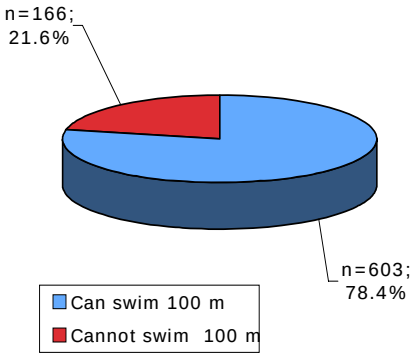


Figure 2. How do you feel about this swimming task? -

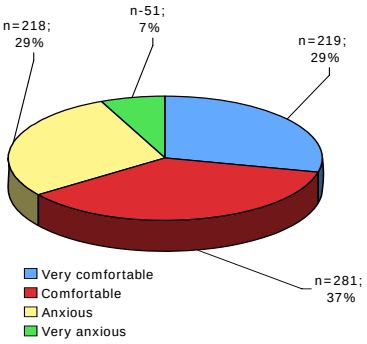


Figure 3. Can you stay afloat in deep water 20 m offshore without support? -

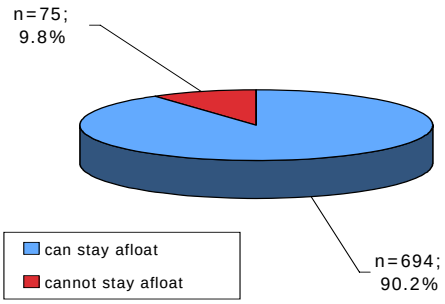


Figure 4. How do you feel about this flotation task? -

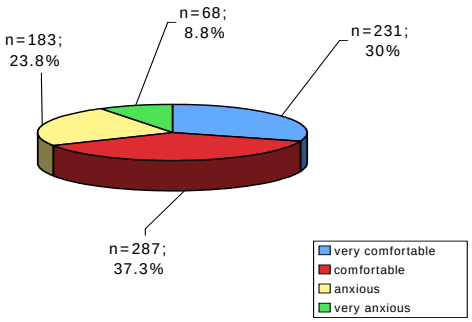


Figure 5. Have you had rescue/lifesaving training? -

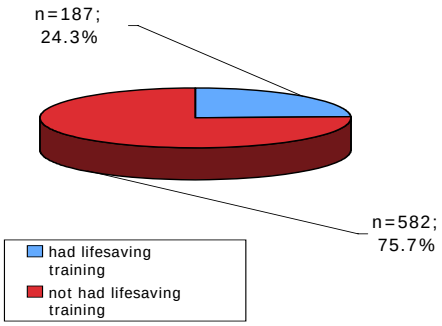
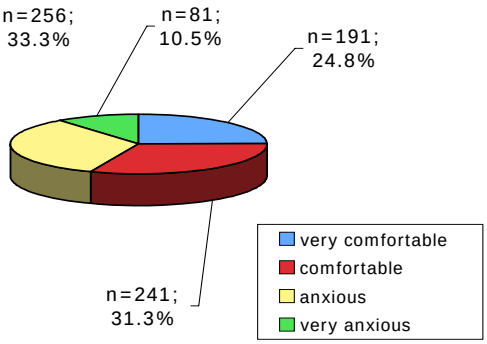


Figure 6. How confident would you be about having to rescue your child? -



Figures 1 and 2 show that most parents/caregivers (78%; *n* = 603) estimated that they could swim 100 m non-stop in open water, although more than one third (35%; *n* = 269) reported being *anxious/very anxious* about doing this swimming task. Similarly, most adults (90%; *n* = 694) surveyed estimated that they could float in deep water 20 m offshore without support, although one third (33%; *n* =251) also felt *anxious/very anxious* about performing this task (See Figures 3 and 4). When asked about their aquatic emergency skills, slightly less than half (48%; n = 370) of parents/caregivers reported that they had been certified in cardio-pulmonary resuscitation (CPR). In addition, Figures 5 and 6 show that more than three quarters (76%; *n* =582) of participants had not received any rescue/lifesaving training yet more than half (56%; *n* = 432) felt *comfortable/very comfortable* about their ability to rescue their own child/children.

When water safety skills were analysed by gender, considerable differences were evident among the self-estimated water safety skills of parents/caregiver beachgoers. Table 3 shows that significantly more males than females (χ^2 [1, N = 769] = 35.868, p = <0.001) estimated that they could swim 100 m non-stop in open water (males, 89% *v* females, 71%). In addition, significantly more males were confident of their swimming ability than females (χ^2[3, N = 769] = 77.120, p = <0.001) with more than three quarters of males (82%; *n* = 264) compared with only one half of females (53%; *n* = 236) reporting that they felt *comfortable/very comfortable* about performing this task. In contrast to this male confidence in their swimming ability, almost half (47%; *n* = 210) of the females surveyed felt *anxious/very anxious* about their swimming ability compared with less than one fifth of males (18%; *n* = 59).

Similar gender disparities were evident also in self-estimated flotation ability with significantly more males than females (χ^2 [1, N = 769] = 9.749, p = <0.002) estimating that they could float in deep water 20 m offshore without support (males 81%, females 53%). Table 3 also shows significant gender differences with more than half of females (52%; *n* = 189) compared with less than one fifth of males (19%; *n* = 62) feeling *anxious/very anxious* about having to perform this task (χ^2[3, N = 769] = 80.539, p = <0.001).

More females than males reported having been certified in CPR (females 51%, males 44%) but fewer had received rescue/lifesaving training (females 23%, males 27%) although this was not statistically significant (See Table 3). Although differences in rescue/lifesaving training were not statistically significant, significantly more males than females (χ^2 [3, N = 769] = 77.749, p = <0.001) felt *comfortable/very comfortable* about

the prospect of having to rescue their own children (males 56%, females 44%). In contrast to this male confidence in their lifesaving ability, Table 3 also shows that more than half of female respondents compared with one quarter of males *anxious/very anxious* about having to rescue their own children (females 56%, males 27%).

Table 3. ***Self-estimated Water Safety Skills of Parents/Caregivers by Gender***

Can you swim 100 m non-stop in open water?	**Males** *n(%)*	**Females** *n(%)*	χ^2	*p*
Yes	287 (88.9%)	316 (70.9%)	35.868*	<0.001
No	36 (11.1%)	130 (29.1%)		
How do you feel about this task?				
Very comfortable	127 (39.3%)	93 (20.9%)	77.120*	<0.001
Comfortable	137 (42.4%)	143 (32.1%)		
Anxious	55 (17.0%)	163 (36.5%)		
Very anxious	4 (1.2%)	47 (10.6%)		
Can you stay afloat in deep water 20 m offshore without support?				
Yes	304 (94.1%)	390 (87.4%)	9.749*	0.002
No	19 (5.9%)	56 (12.6%)		
How do you feel about this task?				
Very comfortable	149 (46.1%)	82 (18.4%)	80.539*	<0.001
Comfortable	112 (34.7%)	175 (39.2%)		
Anxious	48 (14.9%)	135 (30.3%)		
Very anxious	14 (4.3%)	54 (12.1%)		
Have you been certified in CPR?				
Yes	141 (43.7%)	229 (51.3%)	4.440*	0.035
No	182 (56.3%)	217 (48.7%)		
Have you had rescue/lifesaving training?				
Yes	86 (26.6%)	101 (22.6%)	1.612	0.204
No	237 (73.4%)	345(77.3%)		
How would you feel about rescuing your child?				
Very comfortable	120 (37.2%)	71 (15.9%)	77.749*	<0.001
Comfortable	115 (35.6%)	126 (28.3%)		
Anxious	76 (23.5%)	180 (40.4%)		
Very anxious	12 (3.7%)	69 (15.5%)		
Total	323 (100.0%)	446 (100.0%)		

*Significant at the 0.05 level

When the water safety skills of parents/caregivers who took part in the study were analysed by ethnicity, considerable differences were evident in swimming, floating, rescue and CPR abilities. Figure 7 shows that approximately half of Pasifika and Asian parents/caregivers compared with one fifth of European, Maori and other ethnicities reported that they were unable to swim 100 m non-stop in open water. When asked how they felt about performing this task, three quarters of Maori (73%), two thirds of European (66%), one half of Pasifika (56%) and one third of Asian (35%) parents/caregivers reported they felt *comfortable/very comfortable* (See Table 4.3a, Appendix 3).

Figure 7. Can you swim 100 m non-stop in open water? - Yes

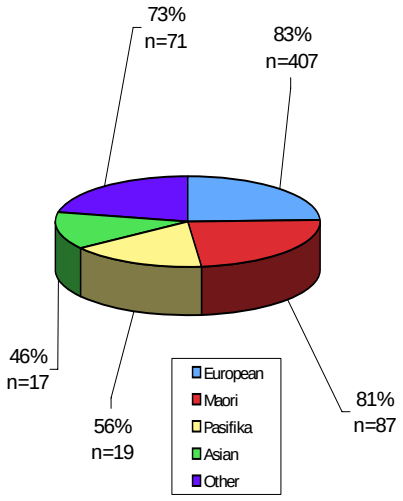


Figure 8. Can you stay afloat in deep water 20 m offshore without support? -Yes

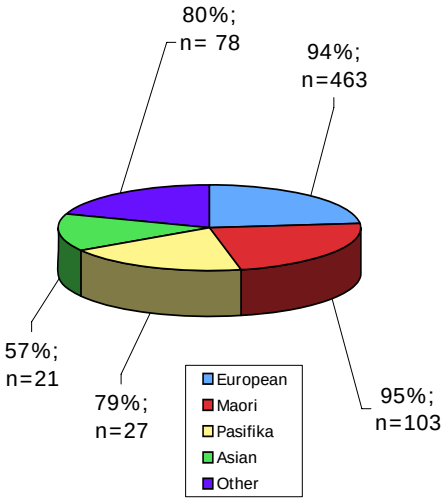


Figure 9. Have you been certified in CPR? - Yes

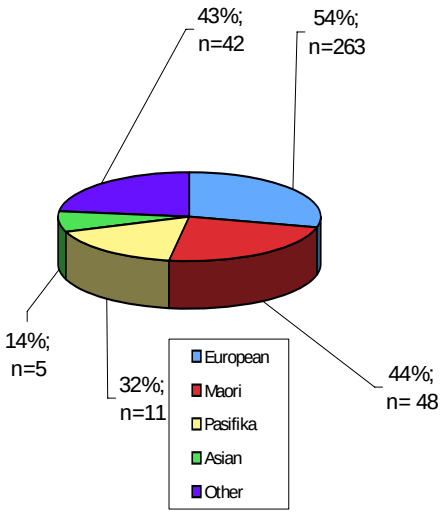


Figure 10. Have you had any rescue/lifesaving training? - Yes

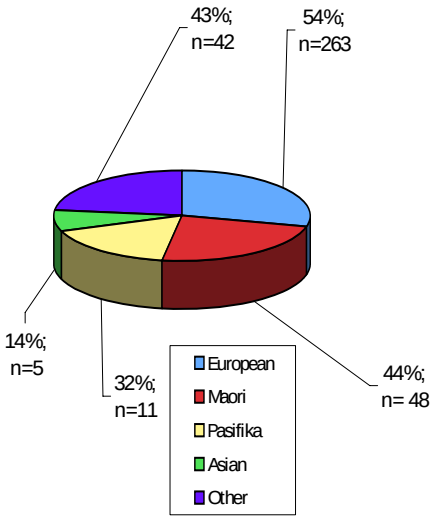


Figure 8 shows Asian parents/caregivers reported the least ability to float unaided in open water. Table 4.3a (See Appendix 3) indicates that two thirds (68%) of Asian respondents were *anxious/very anxious* about having to perform this task compared with less than a third of European (30%) or one quarter (25%) of Maori parents/caregivers. Figure 9 shows that European parents/caregivers were most likely, and Asian parents/caregivers least likely, to have acquired CPR certification. Similarly, fewer Asian participants reported having received any rescue/lifesaving training (see Figure10). When asked how they felt about having the skills to perform a rescue on one of their children, almost three quarters (73%) of Asian parents/caregivers felt *anxious/very anxious* about performing this task compared with less than half of European (44%), Maori (33%) Pasifika (41%) and 'other' ethnicities (38%) (See Table 4.3b, Appendix 3).

No significance differences were found between beachgoers surveyed at surf or flat-water beaches in self-estimated swimming and lifesaving proficiencies (See Tables 4.3d, 4.3e and 4.3f, Appendix 3).

Key Points

In terms of parent/caregiver water safety skills:

- One fifth (n = 166; 22%) of parents/caregivers estimated that they could not currently swim non-stop for 100 m in open water
- More females than males estimated that they could not swim 100 m (females 29%, males 11%)
- Many more females than males expressed anxiety about having to perform this task (females 47%, males 18%)
- Most parents/caregivers (90%) thought that they could stay afloat in deep water 20 m offshore without support
- Twice as many females than males felt anxious about performing this flotation task (females 42%, males 19%)
- Less than half of participants (48%) reported having been certified in CPR
- Less than one quarter of parents/caregivers (24%) reported having received rescue/lifesaving training
- Although there were no differences in the amount of rescue/lifesaving training between males and females, more males were confident of their ability to rescue their children if required (males 73%, females 44%)
- Asian and Pasifika parents/caregivers were more likely than others to have poor swimming, flotation and CPR/rescue skills

4.4 Parent/Caregiver Perceptions of their Child's Swimming Ability

Parents/caregivers were asked two questions related to the swimming competency of their child/children. Table 4 shows the parental/caregiver responses with regard to two age groups; those less than 5 years (n = 464) and those aged 5-9 years (n = 508) in their care at the beach.

Table 4. ***Parent/Caregiver Perceptions of their Children's Swimming Ability***

Parent/Caregiver Perceptions		**Under 5 years**		**5-9 years**	
		n	***%***	***n***	***%***
Has your child had swimming lessons?	No	170	36.6	68	13.4
	Yes, 1 child	200	43.1	234	46.2
	Yes, 2 children	74	15.9	151	29.8
	Yes, >2 children	13	2.8	31	6.1
	Don't know	7	1.5	23	4.5
	Total	464	100.0	507	100.0
Compared with others of the same age, estimate your child's swimming ability	Non-swimmer	191	41.3	29	5.7
	Weak swimmer	103	22.3	170	33.5
	Good swimmer	115	24.9	290	57.1
	Don't know	53	11.5	19	3.7
	Total	462	100.0	508	100.0

Table 4 shows that parents/caregivers reported that slightly more than one third (37%) of children less than 5 years of age had not received swimming lessons but this had dropped to 13 percent of children in the 5-9 years age group. No significant differences were found by gender in the reporting of children having received swimming lessons in either age group. When asked about their children's swimming ability, two thirds (64%; n = 294) of parents/caregivers considered their toddlers under 5 years to be a non- or weak swimmer compared with slightly more than a third (39%; n = 199) of young children in the 5-9 years age group. In addition, one quarter (25%; n =115) of parents/caregivers believed their under 5-year-old children to be good swimmers compared with more than half of children (57%; n = 290) in the older age group.

As can be seen in Table 5, when responses were analysed by gender, no significant differences were reported in parental/caregiver estimations of swimming ability for the under 5's (χ^2 [4, N = 462] = 3.944, p = .268), but significantly more males than females

estimated higher swimming ability for their 5-9-year-old children (χ^2 [4, N = 508] = 12.570, p = .006).

Table 5. ***Gender Differences in Parent/Caregiver Perceptions of their Children's Swimming Ability***

How would you describe the swimming ability of your under 5 year-old(s)?	**Males** ***n(%)***	**Females** ***n(%)***	χ^2	***p***
Non-swimmer	64 (37.6%)	127 (43.5%)	3.944	.268
Weak swimmer	44 (25.9%)	59 (20.2%)		
Good swimmer	46 (27.1%)	69 (23.6%)		
Don't know	16 (9.4%)	37 (12.7%)		
Total	170 (100.0%)	292 (100.0%)		
How would you describe the swimming ability of your 5-9-year-old(s)?				
Non-swimmer	10 (4.5%)	19 (6.6%)	12.570*	.006
Weak swimmer	58 (26.1%)	112 (39.2%)		
Good swimmer	146 (65.8%)	144 (50.3%)		
Don't know	8 (3.6%)	11 (3.9%)		
Total	222 (100.0%)	286 (100.0%)		

*Significant at the 0.05 level

No significant differences were found when parental/caregiver perceptions of their under 5-year-old children's swimming experience and ability were analysed by ethnicity, although Asian parents/caregivers were most likely to describe their children as *non-swimmer* and least likely to describe them as *good swimmer* (see Table 4.4a, Appendix 3).

Significant differences were found in the number of 5-9-year old children who had received swimming lessons (See Table 4.4b, Appendix 3). More European and 'other' ethnic groups than Maori, Pasifika and Asian parents/caregivers reported that their 5-9-year-olds had received swimming lessons (89% and 91% compared with 73%, 79% and 78% respectively). Significant differences were also evident in parental/caregiver estimates of swimming competency among the 5-9-year-olds. More Asian parents/caregivers than European, Maori, Pasifika and 'other' ethnicities classified their children as *non-swimmer* or *weak swimmer* (70% compared with 40%, 32%, 37% and 32% respectively). In addition, Table 4.4b also shows that, unlike Asian and Pasifika parents/caregivers, most European, Maori and 'other' ethnic group parents/caregivers classified their children as *good swimmers* (26% and 47% compared with 57%, 64%, and 63% respectively).

No significant differences were found between flat-water and surf beach-going parents/caregivers perceptions of their under 5-year-old children's swimming experience and ability, but significantly more surf beach parents/caregivers estimated that their 5-9-year-olds were good swimmers (surf beach 61%, flat-water beach 49%) (See Table 4.4c, Appendix 3).

Key Points

In terms of children's swimming experience and ability:

- **Parents/caregivers reported that more than one third (37%) of under 5 year olds had not received swimming lessons but this had dropped to 13% of 5-9-year-olds**
- **No gender differences were found in recall of whether children had received swim lessons**
- **Almost two thirds (64%) of parents/caregivers considered their children under 5 years to be non- or weak swimmers with no differences between male and female estimates**
- **Most adults (57%) considered their 5-9-year-olds to be good swimmers**
- **Significantly more males than females estimated their 5-9-year-old children to be good swimmers (males 66%, females 50%)**
- **No differences were found when under 5-year-olds' experience of swimming lessons or estimates of swimming competency were analysed by ethnicity**
- **Asian parents/caregivers were more likely than others to describe their under 5's as non-swimmers/weak swimmers**
- **Parents/caregivers of European and 'other' ethnic backgrounds were most likely to report swimming lessons for their 5-9-year-olds**
- **More Asian parents/caregivers than European, Maori, Pasifika and 'other' ethnicities classified their children as *non-swimmer* or *weak swimmer* (70% compared with 40%, 32%, 37% and 32% respectively)**
- **Most European, Maori and 'other' ethnic group parents/caregivers classified their children as *good swimmers* (57%, 64%, and 63% respectively).**

4.5 Parent/Caregiver Perceptions of their Child's Drowning Risk

Parents/caregivers were asked to estimate the risk of drowning for their child/children at the beach on the day of the survey. Table 6 shows that most parents/caregivers considered there was slight or no risk of drowning for their under 5's (60%; *n* = 276) and for their 5-9-year-olds (82%; *n* = 415). One fifth of parents/caregivers considered the drowning risk for their under 5's to be *extremely risky* (20%; *n* =92) or *very risky* (19%; *n* = 87), but only a small proportion considered the risk of drowning for their 5-9-years-olds to be *extremely risky* (6%; *n* = 29) or *very risky* (10%; *n* = 52).

Table 6. ***Parent/Caregiver Perceptions of Their Children's Risk of Drowning***

What is the drowning risk for your child/children at the beach today?	Under 5 years		5-9 years	
	n	*%*	*n*	*%*
Extremely risky	92	19.9	29	5.7
Very risky	87	18.8	52	10.3
Slightly risky	204	44.1	283	55.8
No risk	72	15.6	132	26.0
Don't know	8	1.7	11	2.2
Total	463	100.0	507	100.0

When parental/caregiver estimates of their children's drowning risk was analysed by gender, Table 7 shows that no significant differences were found between male and female estimates for the under 5's (χ^2 [4, N = 463] = 6.494, p = .165), but significant differences were evident among male and female when estimating the drowning risk for the older age group (χ^2 [4, N = 507] = 26.347, p = <0.001) with twice as many males than females likely to estimate *no risk* (males 37%, females 18%).

No significant differences were evident when parental/caregiver estimates of risk of drowning at the beach for their under 5-year-olds were analysed by ethnicity (See table 4.5a, Appendix 3). More Pasifika and 'other' ethnic groups than European, Maori, or Asian parents/caregivers classified the risk to their very young children as *extremely risky*/*very risky* (55% and 52% compared with 34%, 38%, 29% respectively). Estimates of high drowning risk by parents/caregivers dropped sharply across all ethnic groups (range 9% -18%) when applied to the 5-9 years age group (See Table 4.5a, Appendix 3).

Table 7. ***Gender Differences in Parent/Caregiver Perceptions of Their Child's Risk of Drowning***

What is the drowning risk for your under 5-years-olds at the beach today?	**Males** *n(%)*	**Females** *n(%)*	χ^2	*p*
Extremely risky	31 (18.1%)	61 (20.9%)		
Very risky	27 (15.7%)	60 (20.5%)		
Slightly risky	79 (46.2%)	125 (42.8%)	6.494	.165
No risk	33 (19.3%)	39 (13.4%)		
Don't know	1 (0.6%)	7 (2.4%)		
Total	171	292		
What is the drowning risk for your 5–9-year-olds at the beach today?				
Extremely risky	10 (4.5%)	19 (6.7%)		
Very risky	20 (9.0%)	32 (11.2%)		
Slightly risky	110 (49.5%)	173 (60.7%)	26.347*	<0.001
No risk	81 (36.5%)	51 (17.9%)		
Don't know	1 (0.5%)	10 (3.5%)		
Total	222	285		

*Significant at the 0.05 level

No significant differences were evident between flat-water and surf beachgoers' estimates of risk of their child drowning at the beach for either age group (See Table 4.5b, Appendix 3).

Key Points

In terms of parent/caregiver perceptions of child drowning risk:

- **Most parents/caregivers reported slight or no drowning risk for both age groups (under 5's, 60%: 5-9 year olds, 82%)**
- **One fifth of parents/caregivers considered the drowning risk for their under 5's to be *very risky* (20%) or *quite risky* (19%)**
- **No significant differences were found between male and female estimates of drowning risk for the under 5's**
- **Significant differences were evident among male and female when estimating the drowning risk for the older age group with twice as males than females likely to estimate *no risk* (males 37%, females 18%)**
- **No significant differences were found in parents/caregivers estimates of risk of drowning at the beach for their children when analysed by ethnicity**

4.6 Parent/Caregiver Perceptions of Supervision of their Child's Water Safety at the Beach

Parent/caregiver practice and perceptions of supervision of the water safety of their children when at the beach was elicited in three questions that asked respondents to best describe their action when the children were in the water and a summary question on who did they think was best able to supervise their children in the water at the beach (See questions 16, 20 and 21, Appendix 1). Table 8 shows the self-reported supervisory behaviours that parents/caregivers engage in when their children are playing in the water. For the under 5-year-olds, most parents reported that they either stayed close to their children in the water (71%; *n* = 326). Almost one quarter of parents/caregivers reported that they watched them constantly from the beach (23%; *n* = 107). For the older 5-9 years age group, the pattern of supervision changed with watching them constantly from the beach being the most frequently reported supervisory behaviour (46%; *n* = 232), followed by staying close to them in the water (43%; *n* = 216). A small proportion of parents/caregivers also reported that their main supervisory practice for the older age group was to tell children not to go out too far (8%, *n* = 38) or make sure other older children were with them (2%, *n* = 13).

Table 8. ***Parent/Caregiver Self-reported Supervisory Behaviour***

Which action best describes what you do when your children are in the water?	**Under 5 years**		**5 - 9 years**	
	n	***%***	***n***	***%***
- Stay close to them in the water	326	70.7	216	42.5
- Watch constantly from the beach	107	23.2	232	45.7
- Tell them not to go out too deep	12	2.6	38	7.5
- Make sure older children are with them	1	0.2	9	1.8
- Other	15	3.3	13	2.5
Total	464	100.0	508	100.0

When self-reported supervisory behaviour was analysed by gender, Table 9 shows that no significant differences were found between males and females with regard to supervision of their children in either age group and that the shift from staying close to them in the water to watching them constantly from the beach in the older age group was similar for both male and female participants.

Table 9. ***Gender Differences in Parent/Caregiver Self-reported Supervisory Behaviour***

Which action best describes what you do when your under 5-year-olds are in the water?	**Males** ***n(%)***	**Females** ***n(%)***	χ^2	***p***
- Stay close to them in the water	118 (69.4%)	208 (71.5%)		
- Watch constantly from the beach	43 (25.3%)	64 (22.0%)		
- Tell them not to go out too deep	6 (3.5%)	6 (2.1%)	3.876	.423
- Make sure older children are with them	0 (0.0%)	1 (0.3%)		
- Other	3 (1.8%)	12 (4.1%)		
Total	170 (100.0%)	291 (100.0%)		
Which action best describes what you do when your 5–9-year-olds are in the water?				
- Watch constantly from the beach	103 (46.4%)	129 (45.1%)		
- Stay close to them in the water	93 (41.9%)	123 (43.0%)		
- Tell them not to go out too deep	18 (8.1%)	20 (7.0%)	3.052	.549
- Make sure older children are with them	5 (2.3%)	4 (1.4%)		
- Other	3 (1.3%)	10 (3.5%)		
Total	222 (100.0%)	286 (100.0%)		

No statistically significant differences were found when self-reported parental/caregiver supervisory behaviour related to both the younger and older age groups was analysed by ethnicity (See Table 4.6a, Appendix 3). In addition, no significant differences in self-reported supervisory behaviour were found for either age group when analysed by beach location (See Table 4.6b, Appendix 3), although slightly more caregivers at surf beaches than at flat-water beaches reported supervising in the water for their under 5-year-olds (surf beaches 72%; flat-water beaches 69%) and their 5-9-year-olds (surf beaches 46%; flat-water beaches 37%).

The final question of the survey asked parents/caregivers their opinion on who was best able to supervise their children in the water at the beach. Two thirds of the 767 respondents to this question believed that the parent/caregiver was best able to provide supervision (66%; $n = 504$) and slightly less than a quarter believed that lifeguards were best able to supervise their children (22%; $n = 172$). One tenth of participants believed supervision was best carried out by adults close to them in the water (10%; $n = 80$), a small proportion thought other children were best (1%; $n = 11$).

When perceptions of supervisory roles were analysed by gender, considerable differences in opinions were evident between males and females. Table 10 shows that significantly more females than males (χ^2 [1, $N = 767$] = 20.387, $p = <0.001$) believed that

the role of water safety supervisor was best filled by parents/caregivers (females 72%, males 57%). In addition, more males than females thought that either lifeguards (males 28%, females 19%) or adults close to them in the water (males 13%, females 8%) were best able to supervise their children's water activity.

Table 10. ***Gender Differences in Parent/Caregiver Perceptions of Who is Best Able to Supervise Children's Water Activity at the Beach***

Who is best able to supervise your child/children in the water?	**Males** ***n(%)***	**Females** ***n(%)***	χ^2	***p***
- Parents/caregivers	183 (56.8%)	321 (72.1%)		
- Lifeguards	89 (27.6%)	83 (18.7%)		
- Adults nearest them in the water	43 (13.4%)	37 (8.3%)	20.387*	<0.001
- Older responsible children	4 (1.2%)	3 (0.7%)		
- Other children with them	3 (1.0%)	1 (0.1%)		
Total	322 (100.0)	445 (100.0)		

*Significant at the 0.05 level

Significant differences were found in parental/caregiver perceptions of who is best able to supervise the water activity of their children at the beach when analysed by ethnicity.

Table 11. ***Parent/Caregiver Perceptions of Who is Best Able to Supervise Children's Water Activity at the Beach by Ethnicity***

Who is best able to supervise your child/children in the water?	**European** ***n/%***	**Maori** ***n/%***	**Pasifika** ***n/%***	**Asian** ***n/%***	**Other** ***n/%***	**Total** ***n/%***
- Parents/caregivers	340 (69.4%)	67 (62.0%)	16 (47.1%)	15 (40.5%)	64 (66.7%)	502 (65.6%)
- Lifeguards	96 (19.6%)	32 (29.6%)	14 (41.1%)	9 (24.3%)	21 (21.9%)	172 (22.5%)
- Adults nearest them in water	51 (10.4%)	7 (6.5%)	4 (11.8%)	10 (27.0%)	8 (8.3%)	80 (10.5%)
- Older responsible children	3 (0.6%)	0	0	2 (5.4%)	2 (2.1%)	7 (0.9%)
- Other children with them	0	2 (1.9%)	0	1 (2.7%)	1 (1.0%)	4 (0.5%)
Total	490 (64.0%)	108 (14.1%)	34 (4.4%)	37 (4.8%)	96 (12.5%)	765 (100.0%)

Table 11 shows that fewer Pasifika and Asian parents/caregivers than European, Maori and parents/caregivers of 'other' ethnicities thought that parents/caregivers were best able to supervise their children when in the water at the beach (47% and 41% compared with 69%, 62% and 67% respectively). More Pasifika (41%) and Maori (30%) parents/caregivers than all other groups considered that lifeguards were best able to supervise their children in the water. Table 11 also shows that one quarter (27%) of Asian parents/caregivers believed that other adults closest to their children in the water were best able to supervise their water safety.

Table 12 shows that significant differences were evident between caregivers at surf beaches and flat-water beaches when perceptions of supervisory roles were analysed by beach location (χ^2 [4, N = 767] = 21.025, p = <0.001). More flat-water than surf beach-going caregivers believed that the role of water safety supervisor was best filled by parents/caregivers (flat-water beachgoers75%, surf beachgoers 60%). In addition, more surf beach than flat-water beachgoers thought that either lifeguards (surf beachgoers 27%; flat-water beachgoers 15%) or adults close to them in the water (surf beachgoers 12%; flat-water beachgoers 8%) were best able to supervise their children's water activity.

Table 12. ***Parent/Caregiver Perceptions of Who is Best Able to Supervise Children's Water Activity at the Beach by Location***

Who is best able to supervise your child/children when they are in the water?	**Surf beach caregiver**		**Flat-water beach caregiver**		χ^2	*p*
	n	***%***	***n***	***%***		
- Parents/caregivers	289	60.0	215	75.4		
- Lifeguards	129	26.8	43	15.1		
- Adults nearest them in the water	56	11.6	24	8.4	21.025*	<0.001
- Older responsible children	6	1.2	1	0.4		
- Other children playing with them	2	0.4	2	0.7		
Total	482	100.0	285	100.0		

* Significant at the 005

Key Points

In terms of parent/caregiver perceptions of supervision:

- For the under 5-year-olds, most parents reported that they stayed close to their children in the water (71%)
- Almost one quarter of parents/caregivers reported that they watched them constantly from the beach (23%)
- For the older 5-9 years age group, the pattern of supervision changed with 'watching them constantly from the beach' being the most frequently reported supervisory behaviour (46%)
- No significant differences were found between males and females with regard to supervision of their children in either age group
- A shift in behaviour from 'staying close to them in the water' to 'watching them constantly from the beach' in the older age group was similar for both male and female participants.
- Two thirds (66%) thought that parents/caregivers were best able to provide supervision
- Slightly less than a quarter (22%) believed that lifeguards were best able to supervise their children
- More females than males thought parents/caregivers were best able to supervise their children (females72%, males 57%)
- Fewer Pasifika (47%) and Asian (41%) parents/caregivers thought that parents/caregivers were best able to supervise their children
- More Pasifika (41%) and Maori (30%) parents/caregivers considered that lifeguards were best able to supervise their children

5. Discussion

The results of this study suggest that parental/caregiver child water safety behaviours and perceptions of child drowning risk vary considerably within the beach-going public. The results should, however, be considered in respect of several methodological limitations. Firstly, the sample did not include parents/caregivers who take young children to the beach fro aquatic activity outside of peak hours or during weekdays that were not public holidays. Secondly, the survey questionnaire provided self-reported estimates of swimming, flotation and rescue/CPR proficiencies which is also problematic because, although widely used in studies on water safety (for example, the New Zealand Youth Water Safety Survey, Moran, 2003) such measures may not accurately express true ability (Robertson, 1992). Thirdly, the sample population, while representative of the holiday beach-going population, varied from the national population in terms of gender and ethnic demographics. These limitations notwithstanding, the findings do provide evidence of questionable supervisory practice and parental/caregiver misconceptions of their critical role in supervising children's water activity at the beach. The implications of these are addressed in the following discussion and the subsequent section on recommendations.

Observation of parent/caregiver supervision when children were playing in the water indicated that most adults provided appropriate close attention to their child's water safety but one quarter (24%) of those observed did not. Of those not at the water's edge, one third (30%) chose to lie down on the beach sunbathing thereby providing no surveillance of their child's safety. This observational finding was reinforced by the self-reported behaviours reported in the questionnaire where almost one third (30%) of respondents reported not providing supervision close to their children in the water.

Most children were observed playing in the water in groups of two or more (62%) and most supervision (74%) was done by a single person irrespective of the number of children in the water. Looking after more than one child in open water, especially if they are of differing ages and abilities, is especially challenging even when the caregiver is located in-water and not distracted. Among the inappropriate supervisory behaviours observed among in-water caregivers were the wearing of unsuitable attire such as shoes and being fully clothed, failing to constantly observe their children, allowing their charges to drift too far away from them and failing to recognise changing conditions such as larger than usual waves and rips.

The type of supervision provided by parents/caregivers varied with the age of the child. Alarmingly, one quarter of respondents (23%) reported constantly watching their under 5 year-olds from the beach rather than being in the water with them. For the 5-9 year age group, almost half of parents/caregivers (46%) reported watching constantly from the beach rather than from the water. Given the rapidity with which children may drown in open water (Pia, 1974) and especially in the surf and rip conditions that prevail at most surf patrolled beaches included in this study, it is a cause for concern that many parents/caregivers surveyed did not provide close in-water supervision for their 5-9-year-olds. Given that almost half (44%) of the caregivers were not frequent visitors to the beach where they were surveyed, it is possible that many were unaware of potential dangers and the need for caution when their young children were in the water. To counter any misconceptions among parents/caregivers of their essential role in supervision, water safety education initiatives emphasising the importance of close and constant supervision of young children in pools and other closed environments (for example, Safekids USA, 2004; AAP, 2000; CDC, 2004) needs to be specifically extended to parents/caregivers in charge of children at beaches. Furthermore, given the inadequacy of some of the observed in-water supervision, the precise nature of good beach safety supervision also needs to be explicitly promoted.

The lack of close and constant parental supervision (albeit for a minority of parents/caregivers) and the questionable supervisory skill of those that do go to the water, has important implications for lifeguards because it means that any presumption that young children are being adequately looked after by their parents/caregivers may not be sound, as previously suggested by Harrell (2006). Furthermore, the frequency with which children were observed playing in groups, often with a single caregiver, suggests that the presumption by lifeguards of safety in numbers, also reported by Harrell, may too be false.

Of those providing appropriate in-water supervision, most were females (42% compared with 31% of males), a difference that may explained by the predominance of females in charge of children at the beaches surveyed rather than an indication of unsafe male attitudes towards supervision of their child's water safety. Furthermore, no significant gender differences were found in the self-reported supervisory behaviours of parents/caregivers in the survey questionnaire and the shift from in-water supervision to constant supervision from the beach from the younger to older age group was consistent for both males and females.

However, important gender differences that may impact on the quality of water safety care provided by caregivers were reported in self-estimates of personal water safety ability, child swimming skills and child drowning risk. Males were more likely than females to report confidence in their own swimming ability, findings that affirm previous studies by Moran (2003) with youth, Gulliver and Begg (2005) with young adults, and Howland et al., (1997) with adults. Whether this confidence in swimming ability is well founded and whether any superior parental/caregiver swimming skill provides children with greater protection in the event of an emergency is not known. Some suggestion of male overestimation of water safety ability is, however, indicated in the responses to questions on rescue ability where males were more confident of their ability to rescue their child even though they reported no more lifesaving training than females that took part in the study. In contrast to this, lower estimates of female water safety skills, whether imagined or real, may make females more conscious of the need to keep children out of danger by early intervention rather than depending on the adequacy of their water safety skills to cope with a crisis situation.

Other areas of gender difference in water safety beliefs that may impact adversely on adult decision-making about child water safety at the beach are related to estimates by parents/caregivers of child swimming competency and their assessment of child drowning risk. While no significant gender differences were found in parents/caregivers estimates of swimming ability for the under 5‘s, males reported higher estimates of competency among their 5-9-year-olds than females (males 66%, females 50%). This may be indicative of an overestimation by some males of their youngsters’ ability to cope with the demands of open water activity that may, in turn, reduce the level of attention paid by males when supervising their children at the beach. In contrast to this, lower estimates of their child’s ability to manage their own risk by females may again make them more cautious in their management of children in the water at the beach.

As was the case with estimates of swimming ability, male estimates of drowning risk for their 5-9-year-olds differed significantly from that of females with twice as many males reporting no risk at the beach on the day of the survey (males 37%, females 18%). This may be indicative of a tendency to underestimate child drowning risk among males consistent with other studies that have found a male tendency to underestimate personal drowning risk (Howland et al., 1997, McCool, Moran, & Ameratunga, 2006; Moran, 2006c). The implication of this on young children’s water safety is that when under the supervision of male adult caregivers at the beach, the need for care may be diminished in

the mistaken belief that conditions are not potentially dangerous. In contrast to this, the female disposition to perceive greater risk for their 5-9-year-olds may make them more risk sensitive than males when supervising at the beach. Moreover, the previously discussed male higher estimates of child swimming competency together with lower estimates of drowning risk, may present a potentially fatal combination especially where additional layers of protection such as lifeguard supervision may not be present or may be compromised for reasons previously discussed.

Further gender differences that may influence the level of care of children were found in parent/caregiver understanding of who is best able to supervise children in the water at the beach. While two thirds of respondents (66%) rightly considered the parent/caregiver to be the best supervisor, more males than females thought that supervision of their child was the responsibility of others, including lifeguards (males 28%, females 19%) or adults close by in the water (males 13% females 8%). Such misguided beliefs may place undue demands on lifeguards and members of the public alike and may be best addressed by lifeguard organisations and water safety promoters in safety campaigns in much the same way that swimming pool owners have been challenged in campaigns such as '*Your Pool, Your Responsibility'* (WaterSafe Auckland 2006).

While ethnicity did not influence water safety supervision to the same extent as gender, some important differences were evident between ethnic groups. Notably, parents/caregivers from European, Maori and 'other' ethnic backgrounds reported better personal swimming, floating and rescue skills than Pasifika and Asian parents/caregivers. Similarly, European, Maori and 'other' groups also reported better swimming ability of their children. This may place children from Asian and Pasifika social groups at greater risk at the beach because of reduced ability to cope with unintentional submersion or hazardous water conditions. It may, on the other hand, make them more risk averse and unlikely to take the risks that more confident children and parents/caregivers may find acceptable. Further study is required to substantiate or refute such speculation. Some misconceptions of who is best able to supervise children were evident and require attention from lifeguard organisations and other water safety promoters alike. Less than half of Asian (41%) and Pasifika (47%) parents/caregivers considered parents to be the best supervisors of their children, and many Maori (30%) and Pasifika (41%) parents/caregivers wrongly thought that lifeguards were the best supervisors of their children. In addition, one quarter (27%) of Asian parents/caregivers incorrectly identified other adults as being responsible for their children's water safety supervision at the beach.

Differences between beachgoers surveyed at surf beaches and flat-water beaches in estimates of their swimming and lifesaving skills, estimates of their children's swimming abilities and perceived risk of their drowning were not marked. Significant differences were evident in parent/caregiver self-reported supervisory practices with those at surf beaches more likely to supervise their children in the water rather than from the beach - a positive reflection of parental/caregiver understanding of the need for close and constant attention. Paradoxically though, when asked who was best able to supervise their young children in the water, significantly more surf beachgoers than flat-water beachgoers felt that lifeguards best fulfilled that role rather than parents/caregivers. Whether such opinion reflects recognition of the merits of lifeguards or whether it is a deflection of responsibility to others is difficult to ascertain. What such beliefs may do is place an unrealistic expectation on lifeguards to provide the close and constant attention that young and vulnerable children require when in the water. Furthermore, given that lifeguards may often presume that young children are being adequately guarded by their parents/caregivers as previously suggested by Harrel (2006), the potential exists for inadequate close and constant attention because of mutual misunderstanding of whose task it is to actually provide the water safety supervision required. Promotion of the collective need for close and constant attention by parents/caregivers combined with heightened awareness of the supporting supervisory role of young children by lifeguards may address this potential danger.

6. Recommendations

In light of these findings, several recommendations are made. These are:

1 Parents and other adults responsible for young children at the beach need to:

- Adopt safe supervision practices that minimally require close and constant attention at the water's edge even in calm and seemingly benign conditions
- Be prepared to move to their children if they inadvertently drift away when in the water
- Instruct children to retain close contact with their supervisor especially in moving water
- Keep children close together if supervising more than one child and limit activity if conditions and abilities make close contact with all children difficult
- Be aware of the difficulties of watching groups of children, get other adults to help supervise and distribute responsibility so that every child is covered
- Do not overestimate caregiver ability to respond to an emergency rescue situation, especially important for male caregivers
- Do not underestimate the drowning risk to young children at beaches even in calm conditions, especially important for male caregivers
- Do not assume that lifeguards can safely watch over their children without their close and constant supervisory assistance
- Be prepared to react to changing conditions by observing surf conditions, checking tides and currents, checking flags and landmarks
- Ask a lifeguard for advice if unsure about conditions or how best to supervise their children
- IF IN DOUBT, KEEP YOUR CHILDREN OUT

2 Surf life saving organisations need to:

- Make lifeguards aware of the findings of this survey especially in relation to presumptions about the safety of young children apparently under close and constant supervision, the supervisory skills of parents/caregivers and the 'safety in numbers' notion of children swimming in groups

- Develop scanning and vigilance techniques specifically designed to monitor young children in light of the findings of this study
- Promote public safety messages about quality supervision aimed specifically at adults in charge of youngsters at beaches that stress the need for partnership with lifeguards in order to ensure maximum protection of young children
- Positively reinforce good parent/caregiver practice when observed on patrols

3 Water safety organisations, national, regional and local authorities need to:

- Develop guidelines for the safe supervision of young children at beaches
- Promote safe supervision guidelines through resource development and dissemination through media campaigns targeting family groups at beaches
- Make explicit the dangers of unsupervised swimming at beaches, especially non-patrolled surf beaches
- Promote swimming and other emergency skills among all caregivers
- Erect multilingual signage at all popular family beaches indicating site-specific dangers and emergency instructions.

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Appendices

THE UNIVERSITY OF AUCKLAND
FACULTY OF EDUCATION
Te Kura Akoranga o Tamaki Makaurau
INCORPORATING THE AUCKLAND COLLEGE OF EDUCATION

SURF LIFE SAVING NEW ZEALAND

WaterSafe AUCKLAND INC.

BEACH SAFETY SURVEY

Completion of this questionnaire implies consent. Assurances in regard to anonymity and confidentiality are guaranteed.
To ensure confidentiality, please do not write your name on this form.

This questionnaire is designed to gather information about your swimming safety and the safety of those youngsters who are in your care at the beach today. Some of the questions ask for your views and feelings about water safety especially that of the youngsters that you are in charge of.
Please do not take too long over each question – normally your first answer is the best. If you have any queries about the questionnaire please ask the researcher who will be happy to assist you.

Survey No:

1 Are you ?

O Male

O Female

2 How would you describe yourself?

O European New Zealander

O Maori

O Pasifika

O Asian

O Other, please describe:

_____

3 How often have you been to this beach with your family?

O First time

O 2-5 times

O 6-10 times

O 11-20 times

O More than 20 times

4 How many children 9 years and under are in your care at the beach today?

O 5 years and under, put number in box

O 6-9 years, put number in box

5 What is your relationship to the children?

O Father

O Mother

O Older brother or sister

O Other adult caregiver (eg relative, guardian, nanny, friend of family etc). Please describe:

_____

(Please turn the page over)

6 Can you swim 100m nonstop in open water?

O Yes

O No

7 How do you feel about swimming 100m nonstop in open water?

O Very Comfortable

O Comfortable

O Anxious

O Very anxious

8 Can you stay afloat in deep water 20m offshore without support?

O Yes

O No

9 How would you feel about staying afloat in deep water without support?

O Very Comfortable

O Comfortable

O Anxious

O Very anxious

10 Have you been certified in CPR?

O Yes

O No

11 Have you had water rescue/lifesaving training?

O Yes

O No

12 How would you feel about rescuing your child from the water?

O Very Comfortable

O Comfortable

O Anxious

O Very anxious

If you have children 5 YEARS AND UNDER with you today, please answer questions 13-16.

13 How many of the 5 YEARS AND UNDER children with you today have had swimming lessons?

O None
O 1 child
O 2 children
O 3 children
O Don't know

14 Generally, how would you describe their swimming ability compared with others their age?

O Non swimmers
O Weak swimmers
O Good swimmers
O Don't know

15 How would you rate the risk for your children 5 YEARS AND UNDER going in the water today?

O Extremely risky
O Very risky
O Slightly risky
O No risk
O Don't know

16 Tick which ONE (1 ONLY) of these best describes what you do when your children 5 YEARS AND UNDER are in the water?

O I watch them constantly from where we are set up on the beach
O I tell them not to go out too deep
O I stay close to them in the water
O I make sure one of my older children is with them in the water
O Other, please describe:

_____

If you have children 6-9 YEARS with you today, please answer questions 17-20.

17 How many of the 6-9 YEAR OLD children with you today have had swimming lessons?

O None
O I child
O 2 children
O 3 children
O Don't know

18 Generally, how would you describe their swimming ability compared with others their age?

O Non swimmers
O Weak swimmer
O Good swimmer
O Don't know

19 How would you rate the risk for your children 6-9 YEARS in the water today?

O Extremely risky
O Very risky
O Slightly risky
O No risk
O Don't know

20 Tick which ONE (1 ONLY) of these best describes what you do when your children 6-9 YEARS are in the water?

O I watch them constantly from where we are set up on the beach
O I tell them not to go out too deep
O I stay close to them in the water
O I make sure one of my older children is with them in the water
O Other, please describe:

_____

21 Finally, tick which ONE (1 ONLY) of the following you think is best able to supervise your child when they are in the water at the beach

O Other children playing with them
O Lifeguards
O Older responsible children
O Adults nearest to them in the water
O Parents/caregivers

Water safety of family groups at beaches

Name of Chief Researcher: Dr Kevin Moran, Principal Lecturer, Faculty of Education, The University of Auckland
Contributing organizations: University of Auckland, Surf Life Saving New Zealand, WaterSafe Auckland

To the parent/caregiver

All adults in social groups containing children at the beach today are invited to take part in this survey about beach water safety.

What's it about?

While beaches are a fun family recreational environment providing opportunity for hours of enjoyment and exercise for adults and children alike, they can also be very dangerous especially for high risk drowning groups such as young children. In New Zealand, many people go to beaches for holidays or just a day out in groups – friends, families, social and church groups. They also often choose beaches that are patrolled by lifeguards who make swimming, especially in surf, a lot safer.

Why are you doing it?

The purpose of this survey is to provide lifeguard and other water safety organisations with information about the water safety of family and other social groups who swim at beaches. It aims to find out how about the water safety background of adults and children in family groups, things such as their swimming ability and how they rate the drowning risk especially for the youngsters in the group.

When and where will it be on?

It is expected that about 500-1000 adults will take part in this survey at popular north island holiday beaches during the summer of 2007. All adults in social groups containing young children will be asked to take part in a brief anonymous survey that will take no more than 5 minutes to complete.

So what will it do?

As a result of this survey, it is hoped that lifeguards and other water safety organisations will be better informed about the water safety abilities and beliefs of the beach-going public and then be better able to provide for their safe use of the beach.

Can I find about out the results?

Results of the survey will be available in electronic form from the websites of WaterSafe Auckland (at http://www.watersafe.org.nz) and Surf Life Saving New Zealand (http://www.surflifesaving.org.nz

Ethics

The survey is anonymous, no names will ever be known and if the information you provide is reported or published, this will be done in a way that does not identify you as its source. Data obtained will be stored at secure premises at the Chief Researcher's place of work and destroyed after a period of six years. You have the right to withdraw from the project at any time and you also have the right to withdraw your information/data up to March 31st 2007. The study has been reviewed by the University of Auckland Human Participants Ethics Committee and will be supervised by Dr Kevin Moran of the Faculty of Education.

Contact Details

For further information, please contact:

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If you have any concerns of an ethical nature you can contact the Chair of the University of Auckland Human Participants Ethics Committee at 373-7599 extn. 87830

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON 19th Feb2007 for 3 years from 14 Feb 2007 to 14th Feb 2009 Reference Number: 2007/Q/005"

Appendix 3

Additional Tables of Results

Section 4.2 Observation of Water Safety Supervision

Table 4.2a. *Observed Supervision of Children in Water by Beach Location*

Observation details	Surf beach		Flat-water beach		χ^2	*p*
	n	*%*	*n*	*%*		
Close supervision	249	76.1	168	77.4	.118	.731
No close supervision	78	23.9	49	22.9		
Total	327	100.0	217	100.0		
Male adult	98	36.7	38	22.4	18.144*	.001
Female adult	91	34.1	89	52.4		
>1 adult	70	25.9	41	24.1		
Non-adult	8	3.0	2	1.2		
Total	267	100.0	170	100.0		
I child in water	88	33.6	48	28.4	9.420	.151
2 children in water	109	41.6	86	50.8		
>3 children in water	65	24.8	35	20.8		
Total	262	100.0	169	100.0		

Section 4.3 Water Safety Skills of Parents/Caregivers

Table 4.3a. *Self-estimated Swimming Ability of Parents/Caregivers by Ethnicity*

Can you swim 100m non-stop in open water? -	European		Maori		Pasifika		Asian		Other		Total	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Yes	407	82.8	87	80.6	19	55.9	17	55.9	71	73.2	601	78.4
No	84	17.1	21	19.4	15	44.1	20	54.0	26	26.8	166	21.6
Very comfortable	152	31.0	37	34.3	4	11.8	3	8.1	21	21.7	217	29.3
Comfortable	176	35.9	42	38.9	15	44.1	10	27.0	38	39.2	281	36.6
Anxious	137	27.9	24	22.2	13	38.2	16	43.2	28	28.9	218	28.4
Very anxious	26	5.3	5	4.6	2	5.9	8	21.6	10	10.3	51	6.7
Total	491	64.0	108	14.1	34	4.4	37	4.8	97	12.6	767*	100.0

*2 missing values where respondents failed to identify ethnicity

Table 4.3b. *Self-estimated Floating Ability of Parents/Caregivers by Ethnicity*

Can you stay afloat unaided in open water? -	European		Maori		Pasifika		Asian		Other		Total	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Yes	463	94.3	103	95.4	27	79.4	21	56.8	78	80.4	692	90.2
No	28	5.7	5	4.6	7	20.6	16	43.2	19	19.6	75	9.8
Very comfortable	154	31.4	39	36.1	9	26.5	2	5.4	26	26.8	230	30.0
Comfortable	191	38.9	42	38.9	13	38.2	10	27.0	30	30.9	286	37.3
Anxious	115	23.4	19	17.6	8	23.5	10	27.0	31	31.9	183	23.9
Very anxious	31	6.3	8	7.4	4	11.8	15	40.6	10	10.3	68	8.7
Total	491	64.0	108	14.1	34	4.4	37	4.8	97	12.6	767*	100.0

*2 missing values where respondents failed to identify ethnicity

Table 4.3c. *Self-estimated CPR/Rescue Ability of Parents/Caregivers by Ethnicity*

Have you been certified in CPR?	European		Maori		Pasifika		Asian		Other		Total	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Yes	263	53.6	48	44.4	11	32.3	5	13.5	42	43.3	369	48.1
No	228	46.4	60	55.6	23	67.7	32	86.5	55	56.7	398	51.8
Have you had rescue/lifesaving training?												
Yes	129	26.3	29	26.9	5	14.7	3	8.1	20	20.6	186	24.3
No	362	73.7	79	73.1	29	85.3	34	91.9	77	79.4	581	75.7
How would you feel about rescuing your child?												
Very comfortable	117	23.8	46	42.6	8	23.5	2	5.4	16	16.5	189	24.6
Comfortable	158	32.2	27	25.0	12	35.3	8	21.6	36	37.1	241	31.4
Anxious	172	35.0	23	21.3	11	32.4	22	59.5	28	28.9	256	33.4
Very anxious	44	9.0	12	11.1	3	8.8	5	13.5	17	17.5	81	10.6
Total	491	64.0	108	14.1	34	4.4	37	4.8	97	12.6	767*	100.0

*2 missing values where respondents failed to identify ethnicity

Table 4.3d. *Self-estimated Swimming Ability of Parents/Caregivers at Surf and Flat-water Beaches*

Can you swim 100m non-stop in open water? -	Surf beach caregiver		Flat-water beach caregiver		χ^2	*p*
	n	*%*	*n*	*%*		
Yes	381	78.9	222	77.6	.168	.373
No	102	21.1	64	22.4		
Very comfortable	142	29.4	77	26.9	1.379	.710
Comfortable	171	35.4	110	38.5		
Anxious	140	29.0	78	27.3		
Very anxious	30	6.2	21	7.3		
Total	483	100.0	286	100.0		

Table 4.3e. ***Self-estimated Floating Ability of Parents/Caregivers at Surf and Flat-water Beaches***

Can you float unaided in open water? -	Surf Beach caregiver		Flat-water beach caregiver		χ^2	*p*
	n	%	*n*	%		
Yes	439	90.9	255	89.2	.610	.435
No	44	9.1	31	10.8		
Very comfortable	152	31.5	79	27.6	7.566	.058
Comfortable	172	35.6	115	40.2		
Anxious	124	25.7	59	20.6		
Very anxious	35	7.2	33	11.5		
Total	483	100.0	286	100.0		

Table 4.3f. ***Self-estimated Rescue/CPR Ability of Parents/Caregivers at Surf and Flat-water Beaches***

Have you been certified in CPR?	Surf Beach caregiver		Flat-water beach caregiver		χ^2	*p*
	n	%	*n*	%		
Yes	240	49.7	130	45.5	1.290	.256
No	243	50.3	156	54.5		
Have you had rescue/lifesaving training?						
Yes	124	25.7	63	22.0	1.297	.255
No	359	74.3	223	78.0		
How would you feel about rescuing your child?						
Very comfortable	119	24.6	72	25.2	1.179	.758
Comfortable	146	30.2	95	33.2		
Anxious	167	34.6	89	31.1		
Very anxious	51	10.6	30	10.5		
Total	483	100.0	286	100.0		

4.4 Parental/Caregiver Perceptions of their Child's Swimming Ability

Table 4.4a *Swimming Lessons and Swimming Ability of Children under 5 Years by Ethnicity*

Has your <5-yr-old child had swimming lessons? -	European		Maori		Pasifika		Asian		Other		Total	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Yes	179	62.6	46	69.7	13	59.1	16	66.7	39	60.9	293	63.4
No	107	37.4	20	30.3	9	40.9	8	33.3	25	39.1	169	36.6
Total	286	62.0	66	14.3	22	4.3	24	5.2	64	13.9	462	100.0
How would you describe the swimming ability of your <5-year-old(s)?												
Non-swimmer	112	39.3	24	36.9	8	36.4	17	76.8	29	45.3	190	41.3
Weak swimmer	62	21.8	15	23.1	6	27.3	4	16.7	16	25.0	103	22.4
Good swimmer	78	22.4	16	24.6	5	22.7	2	8.3	13	20.3	114	24.8
Don't know	33	11.6	10	15.4	3	13.6	1	9.2	6	9.4	53	11.5
Total	285	62.0	65	14.1	22	4.8	24	5.2	64	13.9	460	100.0

Table 4.4b *Swimming Lessons and Swimming Ability of Children aged 5-9 Years by Ethnicity*

Has your 5-9-yr-old had swimming lessons? -	European		Maori		Pasifika		Asian		Other		Total	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Yes	302	89.3	48	72.7	15	78.9	18	78.3	55	91.2	438	86.6
No	36	10.7	18	27.3	4	21.1	5	21.7	5	8.3	68	13.4
Total	338	66.9	66	13.0	19	3.8	23	4.6	60	11.8	506	100.0
How would you describe the swimming ability of your 5-9-year-old?												
Non-swimmer	16	4.7	3	4.5	1	5.3	5	21.7	4	6.7	29	5.7
Weak swimmer	120	35.4	18	27.3	6	31.6	11	47.8	15	25.0	170	33.5
Good swimmer	194	57.2	42	63.6	9	47.4	6	26.1	38	63.3	289	57.0
Don't know	9	2.7	3	4.6	3	15.8	1	4.3	3	5.0	19	3.7
Total	339	66.9	66	13.0	19	3.8	23	4.6	60	11.8	507	100.0

Table 4.4c ***Swimming Lessons and Swimming Ability of Children under 5's by surf and flat-water beach***

Has your <5-year-old had swimming lessons?	Surf beach caregiver		Flat-water beach caregiver		χ^2	*p*
	n	%	*n*	%		
Yes	162	62.2	287	61.8		
No	95	36.5	170	36.6	4.750	.314
Don't know	3	1.2	7	1.5		
Total	260	100.0	464	100.0		
How would you describe the swimming ability of your <5-year-old?						
Non-swimmer	100	38.6	91	44.8		
Weak swimmer	52	20.1	51	25.1	7.184	.066
Good swimmer	76	29.3	39	19.2		
Don't know	31	12.0	22	10.8		
Total	259	100.0	203	100.0		

Table 4.4d ***Swimming Lessons and Swimming Ability of Children aged 5-9 Years by surf and flat-water beach***

Has your 5-9-yr-old had swimming lessons?	Surf beach caregiver		Flat-water beach caregiver		χ^2	*p*
	n	%	*n*	%		
Yes	271	85.0	416	86.6		
No	51	15.0	68	13.4	4.740	.315
Don't know	17	5.0	23	4.5		
Total	339	100.0	507	100.0		
How would you describe the swimming ability of your 5-9-year-old?						
Non-swimmer	18	5.3	11	6.5		
Weak swimmer	100	29.6	70	41.2	7.887	.048*
Good swimmer	207	61.2	83	48.8		
Don't know	13	3.9	6	3.5		
Total	338	100.0	170	100.0		

* Significant at the 0.05 level

4.5 Parental/caregiver Perceptions of their Child's Drowning Risk

Table 4.5a *Parental/Caregiver Perceptions of their Child's Drowning Risk by Ethnicity*

What is the drowning risk for your under 5-year-olds at the beach today?	European		Maori		Pasifika		Asian		Other		Total	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Very risky	51	17.8	14	21.5	7	31.8	4	16.7	15	23.4	91	19.7
Quite risky	49	17.1	11	16.9	5	22.7	3	12.5	18	28.1	86	18.7
Slightly risky	130	45.5	30	46.2	8	36.4	14	58.3	22	34.4	204	44.3
Not risky	53	18.5	8	12.3	1	4.5	2	8.3	8	12.5	72	15.6
Don't know	3	1.0	2	3.1	1	4.5	1	4.2	1	1.6	8	1.7
Total	286	62.0	65	14.1	22	4.8	24	5.2	64	13.9	461	100.0
What is the drowning risk for your 5–9-year-olds at the beach today?												
Very risky	19	5.6	5	7.6	0	0.0	2	8.7	2	3.3	28	5.5
Quite risky	37	10.9	7	10.6	2	10.5	0	0.0	6	10.0	52	10.3
Slightly risky	194	57.4	25	37.9	8	42.1	13	56.5	43	71.7	283	55.9
Not risky	84	24.9	26	39.4	6	31.6	8	34.8	8	13.3	132	26.1
Don't know	4	1.2	3	4.5	3	15.8	0	0.0	1	1.7	11	2.2
Total	338	66.8	66	13.0	19	3.8	23	4.6	60	11.9	506	100.0

Table 4.5b *Parental/Caregiver Perceptions of their Child's Drowning Risk by surf and flat-water beach*

What is the drowning risk for your under 5-year-olds at the beach today?	Surf beach caregiver		Flat-water beach caregiver		χ^2	*p*
	n	*%*	*n*	*%*		
Very risky	57	21.9	35	17.2		
Quite risky	50	19.2	37	18.2		
Slightly risky	109	41.9	95	46.8	3.421	.490
Not risky	38	14.6	34	16.7		
Don't know	6	2.3	2	1.0		
Total	260	100.0	203	100.0		
What is the drowning risk for your 5-9-year-olds at the beach today?						
Very risky	22	6.5	7	4.1		
Quite risky	36	10.7	16	9.5		
Slightly risky	192	56.8	91	53.8	11.059	.026*
Not risky	77	22.8	55	32.5		
Don't know	11	3.3	0	0.0		
Total	338	100.0	169	100.0		

* Significant at the 0.05 level

4.6 Parental/Caregiver Perceptions of Supervision of their Child's Water Safety at the Beach

Table 4.6a. *Differences in Parents/Caregiver Self-reported Supervisory Behaviour by Ethnicity*

Which action best describes what you do when your < 5-yr-olds are in the water?	European		Maori		Pasifika		Asian		Other		Total	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*
- Stay close to them in the water	209	73.3	44	68.8	16	72.7	14	58.3	41	64.1	324	70.6
- Watch constantly from the beach	63	22.1	15	23.4	4	18.2	8	33.3	17	26.6	107	23.3
- Tell them not to go out too deep	4	1.4	2	3.1	2	9.1	2	8.3	2	3.1	12	2.6
- Make sure older children are with them	0	0.0	0	0.0	0	0.0	0	0.0	1	1.6	1	0.2
- Other	9	3.2	3	4.7	0	0.0	0	0.0	3	4.7	15	3.3
Total	285	83.9	64	13.9	22	4.8	24	5.3	64	13.9	459	100.0
Which action best describes what you do when your 5–9-yr-olds are in the water?												
- Watch constantly from the beach	156	46.0	30	45.5	8	42.1	9	39.1	29	48.3	232	65.5
- Stay close to them in the water	150	44.2	29	43.9	9	47.4	9	39.1	18	30.0	215	42.4
- Tell them not to go out too deep	25	7.4	4	6.1	1	5.3	3	13.0	5	8.3	38	7.5
- Make sure older children are with them	1	0.3	3	4.5	1	5.3	2	10.5	2	3.3	9	1.8
- Other	7	2.1	0	0.0	0	0.0	0	0.0	6	10.0	13	2.6
Total	339	66.9	66	13.0	19	3.8	23	4.5	60	11.8	507	100.0

Table 4.6b. *Differences in Parents/Caregiver Self-reported Supervisory Behaviour by Beach Location*

Which action best describes what you do when your < 5-yr-olds are in the water?	Surf beach caregiver		Flat-water beach caregiver		χ^2	*p*
	n	*%*	*n*	*%*		
- Stay close to them in the water	186	72.1	140	69.0		
- Watch constantly from the beach	53	20.5	54	26.6		
- Tell them not to go out too deep	5	1.9	7	3.4	9.473	.058
- Make sure older children are with them	1	0.4	0	0.0		
- Other	13	5.0	2	1.0		
Total	258	100.0	203	100.0		
Which action best describes what you do when your 5–9-yr-olds are in the water?						
- Watch constantly from the beach	147	43.5	85	50.0		
- Stay close to them in the water	154	45.6	62	36.5		
- Tell them not to go out too deep	20	5.9	18	10.6	8.609	.072
- Make sure older children are with them	8	2.4	1	0.6		
- Other	9	2.7	4	2.4		
Total	338	100.0	170	100.0		