

# Safe Living on the Water's Edge: Parental Perceptions of Toddler Water Safety

Summary notes to accompany oral presentation at the 7<sup>th</sup> Australian Injury Prevention and 2<sup>nd</sup> Pacific Rim Safe Communities Conference, Mackay Conference, 15-17 September 2004.

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## Abstract

This paper is a preliminary report of a study on parental/caregiver perceptions of the role of toddler swimming ability, swimming lessons and adult supervision in drowning prevention. Parents or caregivers (n=882) from the Greater Auckland region whose toddlers were either enrolled in toddler swim lessons (n=555) at 18 swim schools or at 23 early childhood centres (n=327) took part in the study by completing a self-administered questionnaire during summer, 2004. Almost two thirds of participants agreed that the earlier toddlers learned to swim the safer they would be (n=563, 63.8%) and that the best age to learn to swim was 3 years or less (n=576, 65.3%). Most participants either disagreed (n = 401; 45.5%) or strongly disagreed (n = 301; 34.1%) that toddlers between 2-4 years were too young to learn to swim. More than half thought that swimming lessons were the best way to prevent toddler drownings (n=457, 51.8%) and almost one third agreed that it was better to develop a toddler's swimming ability rather than rely on adult supervision (n=286, 32.4%). Most parents/caregivers did not know (n=382; 43.3%) whether most toddlers drowned by finding access to someone else's swimming pool and almost one-quarter (n=210; 23.8%) thought that they did. Most participants either agreed that neighbourhood creeks were more dangerous than swimming pools for toddlers (n=350; 39.7%) or were unsure which location was the most dangerous (n=326; 37.0%). Implications of parental perceptions on the role of supervision and swimming lessons in minimising toddler drowning risk are discussed.

## Recommended Citation:

Moran, K., Stanley, T. & Coggan, C. (2004). *Safe living on the water's edge: Parental perceptions of toddler water safety*. Unpublished paper presented at the 7<sup>th</sup> Australian and 2<sup>nd</sup> Pacific Rim Injury Prevention Conference, 15-17 September, Mackay, Queensland.

In New Zealand, the risk of drowning posed by the perceptual, cognitive, and physical immaturity of early childhood is exacerbated by high frequency of risk exposure in an aquatically oriented society with easy access to water. Between 1993-1999, 77 children aged 0-4 years died as a consequence of drowning, an average of 11 deaths per year, and an annual age-specific rate of 4.0 deaths per 100,000 person years, the highest rate of any age group.<sup>1</sup> More than one half (57%) of the victims drowned in a pool, tank or pond, and more than two thirds (67.5%) of the drowning incidents occurred in the home and involved males. Whilst the circumstance of these drownings were similar to those reported in other developed countries, the drowning rate for this age group in New Zealand was almost 50% higher than nearest neighbour Australia.<sup>2</sup>

In an attempt to address this social tragedy, some New Zealand swimming and water safety organisations have publicly encouraged parents to enrol their young children in pre-school swim lessons.<sup>3</sup> Other organisations, notably the Child Safety Foundation of New Zealand, have adopted the more cautionary approach to swimming programmes for infants and toddlers promoted by the American Academy of Pediatrics.<sup>4-5</sup> Even though controversy as to the protective value of toddler swimming ability is not new<sup>6-7</sup>, recent debate has focussed mainly on the appropriate age and capacity of young children to learn to swim and survive<sup>8-11</sup> and the counter threat of increased risk exposure through overconfidence and aroused curiosity in and around water<sup>12-14</sup>. However, the related issue of what parents perceive the protective value of swimming to be has not been well documented. Although many pre-school swim programmes aimed at the 2-4 year age group emphasise aquatic readiness rather than survival skills<sup>15-17</sup>, little is known about the public perception of toddler swimming lessons which, as the name implies, suggests the acquisition of a locomotive skill traditionally associated with safety in water. In addition, although there is widespread recognition of the pivotal role of adult supervision of toddlers in and around water<sup>4, 16-20</sup>, little is known about parental perception of the relative roles of swimming ability and supervision in the water safety of young children. It was the purpose of this paper to examine parental perceptions of toddler water safety especially with regards to toddler swimming ability and the importance of swimming lessons to drowning prevention.

## **Method**

A questionnaire that included a combination of forced-choice and open-ended questions was designed to assess toddler parents/caregivers' knowledge of, and attitudes towards toddler water safety. It also sought information on exposure to drowning risk for toddlers as a consequence of family-related aquatic activity. All professional swim schools (n=38) listed in the telephone directory of the greater Auckland region were asked to take part in a survey of parents/caregivers whose toddlers aged 2-4 years were enrolled in swim lessons during the summer term, 2004. Eighteen swim schools agreed to take part in the study and, on the first day of lessons, 555 parents/caregivers took part in a self-completion questionnaire. A control group of 327 parents/caregivers whose toddlers were not enrolled in swim lessons completed a similar questionnaire at 23 early childhood centres located in the same localities as the swim centres. Data from the completed questionnaires was entered into EPI Info Version 6 for statistical analysis using SAS Version 9.0 in Windows. Frequency tables were generated for all questions and, unless otherwise stated, percentages are expressed in terms of the total number of respondents.

## Key Findings

### 1. Parent/family background

Participants were initially asked about family use of aquatic resources/facilities; their personal and family experience of a life-threatening situation around water; and their self-estimated swimming and resuscitation skills.

Table 1 shows that most participants had been to a beach for family recreation either *very often* (n = 320; 36.3%) or *quite often* (n = 246; 27.9%) and to a public pool either *very often* (n = 264; 29.9%) or *quite often* (n = 179; 20.3%) in the past year.

Table 1. *Family Aquatic Recreation in the Previous Year.*

	Never		Not Often (1-9 times)		Quite Often (10-19 times)		Very Often (20+ times)		Unspecified	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Beach	24	2.7	287	32.5	246	27.9	320	36.3	5	0.6
Public pool	86	9.8	333	37.8	179	20.3	264	29.9	20	2.3
Home pool	339	38.4	300	34.0	86	9.8	114	12.9	43	4.9
Lake, river	465	52.7	322	36.5	35	4.0	22	2.5	38	4.3
Watercraft	368	41.7	342	38.8	80	9.1	63	7.1	29	3.3

Most participants reported some family use of home pools (n = 500; 56.9%) and watercraft (n = 465; 56.9%) during the previous year. Less than half (n = 357; 40.5%) reported using a lake, river or other freshwater location for family aquatic recreation in the previous year. In terms of ownership of aquatic resources, almost one third (n = 256; 29.5%) had use of a boat; 90 (11.0%) had a home spa pool; and 107 (12.2%) had a home swimming pool.

Slightly more than one fifth (n = 193; 21.9%) of participants reported that they had been personally involved in a life-threatening aquatic experience. Of these, most (n = 95; 50.3%) had got into difficulty at a surf beach, and one third (n = 65; 35.4%) described other life-threatening situations around water such as: boat capsizes (n = 21; 11.4%); river-related incidents (n = 19; 10.3%); lake or still water-related incident (n = 11; 6.0%); or falling into a pool (n = 14; 7.7%).

When asked whether their children had ever been involved in a life-threatening aquatic incident, 140 (15.9%) parents/caregivers indicated that their children had experienced an emergency situation in water. Of these, almost one third of incidents were surf-related (n = 42; 30.7%), and approximately one quarter had either slipped in the bath (n = 32; 23.4%) or had fallen into a home swimming pool (n = 34; 25.2%). Other incidents reported included: fall into lake, river or other freshwater location (n = 7; 5.3%); capsizes from a watercraft (n = 4; 3.0%); or submersion in a water container at home (n = 3; 2.3%).

Participants were asked to describe their swimming ability using a 4-point scale that ranged from non-swimmer to excellent swimmer based on estimates of distance swum non-stop in a 25m pool. Table 2 shows that most parents/caregivers thought that they were either *good* (n = 384; 43.5%) or *excellent* swimmers (n = 164; 18.6%), whereas slightly more than one third thought that they were either *weak* (n = 279; 31.6%) or *non-swimmers* (n = 54; 6.1%).

Table 2. Parents/caregivers' Estimates of their Swimming and CPR Ability.

Swimming ability	<i>n</i>	%	Cum %
Non swimmer	55	6.2	6.2
Weak swimmer (25m non-stop in 25m pool)	279	31.6	37.8
Good swimmer (100m non-stop in 25m pool)	384	43.5	81.3
Excellent swimmer (400m non-stop in 25m pool)	164	18.6	99.9
<b>CPR ability</b>			
Could not do child CPR	67	7.6	7.6
Weak understanding of child CPR	319	36.2	43.8
Good understanding of child CPR	349	39.6	83.4
Excellent understanding of child CPR	139	15.8	99.2
Nil response	8	0.9	100.0

When asked about their ability to do CPR on young children, more than one third of participants reported that they had a *weak understanding* ( $n = 319$ ; 36.5%) and some stated that they *could not do* child CPR ( $n = 67$ ; 7.7%).

## 2. Perceptions of toddler water safety

Parents/caregivers were asked what they thought was the best age to teach children to swim. Table 4 shows that almost two thirds of participants (65.3%) thought that children were best taught at 3 years or less, with almost one third thinking that 2 years of age ( $n = 274$ ; 31.6%) or 3 years of age ( $n = 270$ ; 30.6%) were the best ages. Some thought that children were best taught before 2 years of age ( $n = 32$ ; 3.6%), whereas others thought that a later age of 5 years ( $n = 68$ ; 7.7%); 6 years ( $n = 24$ ; 2.7%) or older ( $n = 10$ ; 1.1%) was the best.

Table 4. Parents/caregivers' Estimates of the Best Age to Teach Children to Swim.

	<i>n</i>	%	Cum %
<2 years of age	32	3.6	3.6
2 years of age	274	31.1	34.7
3 years of age	270	30.6	65.3
4 years of age	180	20.4	85.7
5 years of age	68	7.7	93.4
6 years of age	24	2.7	96.1
>6 years of age	10	1.1	97.2
Unspecified	24	2.7	99.9

Participants were asked their opinion on 12 statements related to toddler water safety using a five-point scale ranging from *strongly agree* to *strongly disagree*. Table 5 shows that the first 5 statements related to toddler swimming ability and lessons, followed by 3 statements that focussed on the role of supervision, and finally, 4 statements that related to general issues of toddler water safety.

As can be seen in Table 5, more than a quarter (28.8%) of participants either *agreed* ( $n = 147$ ; 16.7%) or *strongly agreed* ( $n = 107$ ; 12.1%) that toddlers drown because they had not learned to swim. More than half (63.8%) either *agreed* ( $n = 347$ ; 39.3%) or

*strongly agreed* (n = 216; 24.5%) that the earlier children learned to swim the safer they would be. More than half (1.9%) also either *agreed* (n = 311; 35.3%) or *strongly agreed* (n = 146; 16.6%) that swimming lessons were the best way to prevent toddlers from drowning. Almost all parents/caregivers (79.6%) either *disagreed* (n = 401; 45.5%) or *strongly disagreed* (n = 301; 34.1%) that toddlers between 2-4 years were too young to learn to swim. Nearly one third (32.4%) either *agreed* (n = 198; 22.4%) or *strongly agreed* (n = 88; 10.0%) that it was better to develop toddler swimming ability than rely on adult supervision.

Table 5. Parents/caregivers' Opinions on Toddler Water Safety.

	Strongly agree		Agree		Not sure		Disagree		Strongly disagree	
	n	%	n	%	n	%	n	%	n	%
Toddlers drown because they had not been taught to swim	107	12.1	147	16.7	82	9.3	355	40.2	154	17.5
The earlier children learn to swim, the safer they will be	216	24.5	347	39.3	140	15.9	138	15.6	15	1.7
Swimming lessons are the best way to prevent your toddler from drowning	146	16.6	311	35.3	121	13.7	242	27.4	37	4.2
Toddlers between 2-4 years of age are too young to learn to swim	28	3.2	52	5.9	80	9.1	401	45.5	301	34.1
It is better to develop a toddler's swimming ability rather than rely on adult supervision	88	10.0	198	22.4	82	9.3	315	35.7	173	19.6
You should be within arm's reach of your toddler when they are playing in water	480	54.4	282	32.0	26	2.9	59	6.7	3	0.3
At home, it is not possible to constantly supervise toddlers around water	40	4.5	117	13.3	22	2.5	371	42.1	309	35.0
At a surf beach, the lifeguards are the best people to supervise your toddlers	12	1.4	29	3.3	18	2.0	305	34.6	495	56.1
Homeowners without children shouldn't have to fence their pools	28	3.2	54	6.1	37	4.2	234	26.5	510	57.8
All parents of young children should know how to do CPR in an emergency	418	47.4	409	46.4	14	1.6	4	0.5	11	1.2
Most toddler drowning occurs when toddlers find access to someone else's pool	67	7.6	143	16.2	382	43.3	243	27.6	28	3.2
Neighbourhood creeks and drains are more dangerous than swimming pools for toddlers	91	10.3	259	29.4	326	37.0	137	15.5	45	5.1

Table 5 shows that, when questioned on supervision of toddlers in water, very few parents/caregivers (7.0%) either *disagreed* (n = 59; 6.7%) or *strongly disagreed* (n = 3; 0.3%) that you should be within arm's reach of your toddler in water. Less than one fifth (17.8%) either *agreed* (n = 117; 13.3%) or *strongly agreed* (n = 40; 4.5%) that, at home, it was not possible to constantly supervise toddlers around water. A small proportion (4.7%) either *agreed* (n = 29; 3.3%) or *strongly agreed* (n = 12; 1.4%) that, at a surf beach, lifeguards were the best people to supervise your toddler.

Table 5 also shows that, when questioned on other toddler water safety issues, a small proportion (9.3%) of parents/caregivers either *agreed* (n = 54; 6.1%) or *strongly agreed* (n = 28; 3.2%) that homeowners without children shouldn't have to fence their pools. Very few parents/caregivers either *disagreed* (n = 4; 0.5%) or *strongly disagreed* (n = 11; 1.2%) that all parents of young children should know how to do CPR in an emergency. More than one third (39.7%) either *agreed* (n = 259; 29.4%) or *strongly agreed* (n = 91; 10.3%) that neighbourhood creeks were more dangerous than pools for toddlers and a similar proportion were *not sure* (n = 326; 37.0%). Almost one quarter (n = 210; 23.8%) of parents/caregivers either *agreed* (n = 143; 16.2%) or *strongly agreed* (n = 67; 7.6%) that most toddlers drowned when they found access to a pool on someone else's property, whereas almost half were *not sure* (n = 382; 43.3%).

Parent/caregivers were asked if children could be trusted in a home swimming pool alone, and if so, at what age. Table 6 shows that most participants (n = 613; 69.5%) did not think that children could be trusted around a home swimming pool without direct adult supervision. One quarter of participants (n = 219; 24.8%) thought that children could be trusted, and, of these, some thought that children could be trusted below 9 years of age (n = 49; 5.6%) and most specified between 10-12 years of age (n = 109, 11.9%) or older (n = 65; 7.3%).

Table 6. *Parents/caregivers' Beliefs on when Children could be Trusted around a Home Swimming Pool without Direct Adult Supervision.*

	<i>n</i>	%
Cannot be trusted	613	69.5
Can be trusted below 6 years of age	12	1.4
Can be trusted from 7-9 years of age	37	4.2
Can be trusted from 10-12 years of age	105	11.9
Can be trusted from 13-15 years of age	54	6.1
Can be trusted above 16 years of age	11	1.2
Can trusted but age not specified	23	2.6
Nil response	27	3.1

## Discussion

### 1. Parent/Family background

The high level of family aquatic activity among participants in this study suggests that the exposure to drowning risk for toddlers is high. As shown in Table 1, almost all participants had used a beach (n = 853; 96.7%), a public pool (n = 776; 88.0%) or a home pool (n = 500; 56.7%) for family aquatic recreation in the previous year. In addition, more than one half had used watercraft (n = 485; 55.0%) for recreation. Such findings reinforce previous claims as to the extent of risk exposure posed by participation in aquatic activity among New Zealanders.<sup>2, 20</sup> The extent of the drowning risk is also reflected in the number of participants who had either personally experienced a life-threatening incident (n = 193; 22.0%) or whose children had experienced an aquatic emergency (n = 140; 15.9%). These findings on unreported incidents are consistent with those of previous studies on children.<sup>21-23</sup>

When asked about their swimming and CPR ability, skills that may be employed in the event of a family aquatic emergency, most participants were confident about their swimming abilities, although more than one third of parents estimated that they had weak or no swimming skills (n = 333; 37.8%) and weak or no child CPR skills (n = 386; 43.8%). Similar results have been reported in other studies on adult swimming ability<sup>24</sup> and CPR ability.<sup>25</sup> When asked their opinion on the need for parents of young children to have CPR skills almost all parents/caregivers (93.8%) agreed that it was essential. While the high level of recognition of the need for CPR skills is encouraging, the finding that more than one third of participants (37.8%) had weak or no understanding suggests a reality gap between best intentions and best practice in this important aspect of parenting. Furthermore, even though most participants (55.4%) in the present study thought that they had a sound knowledge of CPR, recent New Zealand evidence would suggest that such confidence might be unfounded with less than 10% of 400 respondents able to correctly recall CPR protocols.<sup>26</sup>

## 2. Parental perceptions of toddler water safety

The protective value of toddler swimming ability and the importance of toddler swimming lessons in drowning prevention was held in high regard by many parents. A majority of parents agreed that the earlier children learned to swim the safer they would be (63.8%) and that swimming lessons were the best way to prevent toddlers from drowning (51.9%). Furthermore, many parents/caregivers also believed that toddlers drowned because they had not learned to swim (28.8%). It would appear therefore that many participants in this study associated the ability to swim with toddler water safety, thereby reinforcing the commonly held belief that swimmer = safe, non-swimmer = unsafe<sup>15</sup>. Alarming, almost one third (32.4%) believed that it was better to develop toddler swimming ability rather than rely on adult supervision. This latter finding is particularly significant since it suggests that some parents believe that enhanced toddler swimming ability is a safer alternative to supervision.

Parents/caregivers were also supportive of an early start to the teaching of swimming. When asked when young children should be taught to swim, most participants (65.3%) thought that 3 years or less was the best age. In addition, almost all disagreed that toddlers between 2-4 years of age were too young to swim (79.6%), a finding that is not supported by some previous studies.<sup>10-11</sup>

Parents were very aware of the importance of close supervision with almost all participants agreeing that a toddler should always be within arm's length when playing in water (86.4%) and disagreeing that it was not always possible to supervise around water in the home (77.2%). However, it is of concern that almost one fifth (17.8%) of parents/caregivers believed that constant supervision was not possible around the home since lapses in supervision have been clearly identified as the primary cause of toddler drowning.<sup>4, 18-21</sup>

As could be expected of a group of parents/caregivers, most participants were supportive of the need for fencing of domestic pools (84.3%), although the lack of understanding with regards to where toddlers drown is a cause for concern. Many parents/caregivers (23.8%) thought that toddlers drowned in someone else's pool and almost half (43.3%) were unsure about whose swimming pool toddlers drowned in. Similarly, many (39.4%) were of the opinion that neighbourhood creeks posed greater danger to toddlers than swimming pools and many (37.0%) were unsure. This lack of parental awareness on the significance of home swimming pools that are familiar to the toddler in drowning incidents would suggest that, in spite of a high media profile and water safety promotion at the community level, many parents are poorly informed about toddler drowning.

## Conclusion

The preliminary analysis of data presented in this paper would suggest that many parents/caregivers have a limited understanding of the nature of toddler drowning. Although attitudes towards the importance of supervision of toddlers around water are positive, many parents have an overly optimistic view of the protective role of swimming ability in toddler drowning prevention. In addition, most parents believe that children are best taught to swim at 3 years of age or less, and that the earlier they learn to swim the safer they will be. Such assumptions might place unrealistic demands on those engaged in toddler swimming instruction and, more importantly, unrealistic

expectations from some parents about the safety benefits that might accrue from toddler swimming lessons. Furthermore, many parents are unaware that home swimming pools familiar to the toddler are the prime sites for toddler drowning. The prevalence of such misconceptions would suggest that present community educational strategies promoting toddler-parent water safety education have had limited effect, and require further effort to address parental understanding of toddler drowning prevention.

### **Acknowledgements**

The authors would like to acknowledge the funding support of the Accident Compensation Corporation (ACC), New Zealand, and staff at the Injury Prevention Research Centre, University of Auckland for assistance in data collection, data input and analysis.

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