

# Protective effect of swimming in a tsunami disaster and its protection of caretakers and children

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**Table 2** Sample Cohort description – Children and their Caretakers

		Infants		Children 1-4		Children 5-9		All Children Under 10	
		N	%	N	%	N	%	N	%
Number of Children with Caretakers		361		647		1,128		2,136	
Number of Caretakers		168		334		943		1,445	
Caretaker Age	Median	26.0		27.5		33.0		31.0	
	Mean	28.0		29.2		34.0		32.2	
Caretaker Sex	Male	6	3.6	15	4.5	32	3.4	53	3.7
	Female	162	96.4	319	95.5	911	96.6	1392	96.3
Caretaker Role	Father	3	1.8	10	3.0	29	3.1	42	2.9
	Mother	136	81.0	285	85.3	855	90.7	1276	88.3
	Grandmother	0		1	0.3	3	0.3	4	0.3
	Sibling	20	11.9	24	7.2	41	4.3	85	5.9
	Other fam. member	9	5.4	14	4.2	15	1.6	38	2.6

### Age groups for children

- Infant – 0-364 days;
- 1-4 years old;
- 5-9 years old and
- 10-17 years

### Caretaker

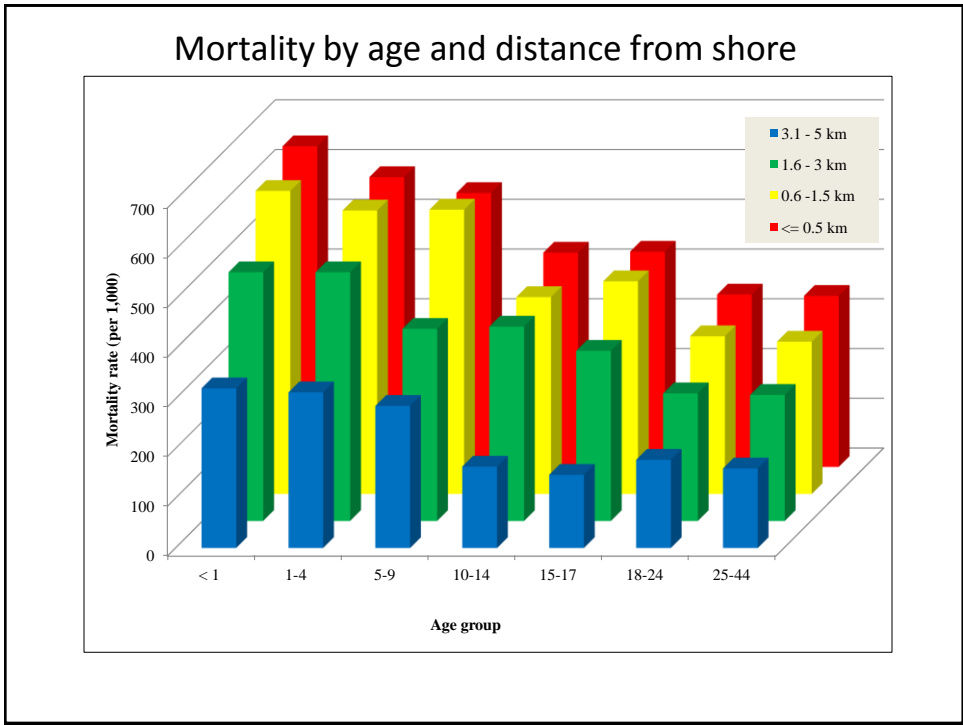
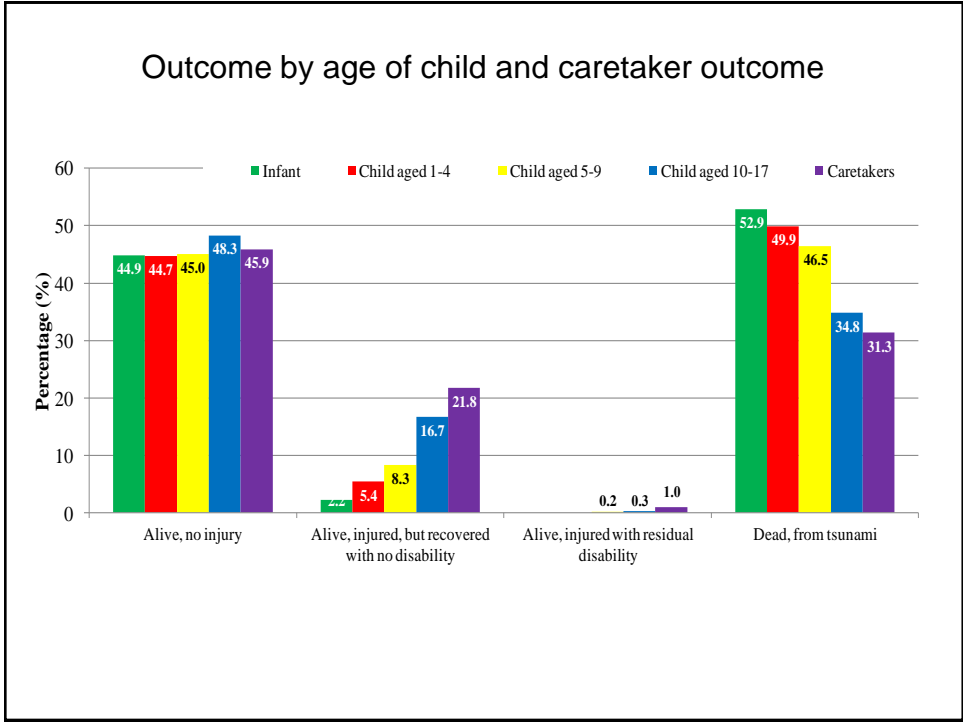
- For each child under 10 years old, the primary caretaker was identified
- That person was the person most responsible for the child in a normal 24 hour period
- Swimming ability of caretaker and child being cared for (thus 4 years and older)

## Caretaker characteristics

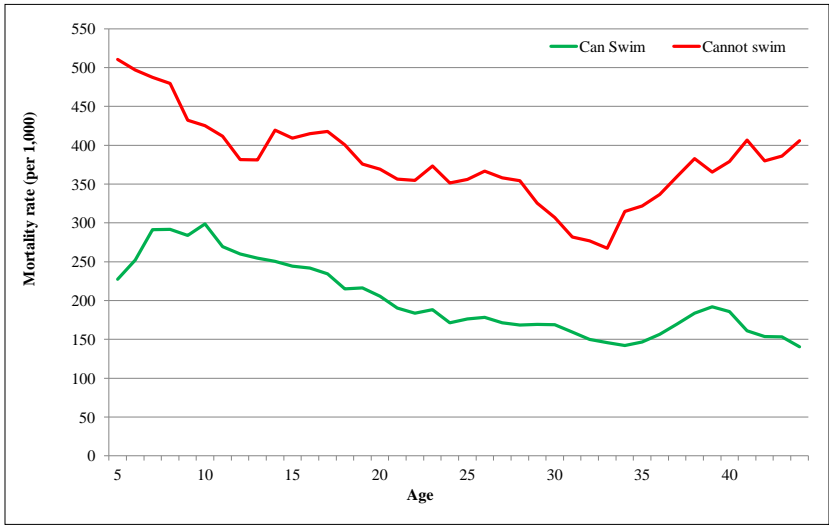
- Infants – 26 years old
- Children 1- 4 years – 27.5 years
- Children 5 – 9 years – 33 years
  
- Caretakers were mainly mothers (88-91%)
- Siblings (4.3 – 11%)
- Fathers (1.8 – 3.1%)

## Swimming ability

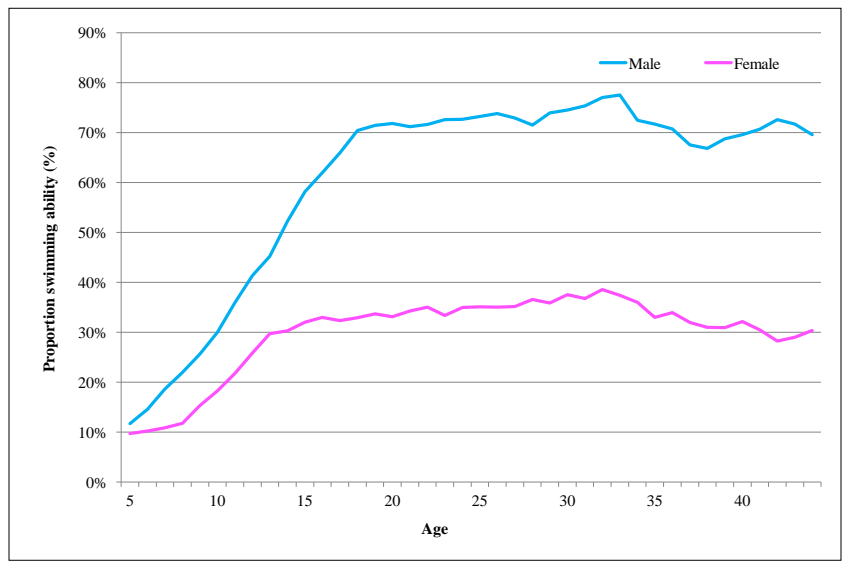
- Defined as a positive response to the following: “If dressed and falling into a pond 25 meters wide and too deep to stand, could you (or household member) cross the pond using any method of movement through the water, and get out?”
  
- Additionally, an individual was categorized as able to swim if their behavior during the tsunami included witnessed swimming (treading water, swimming to a floating object, structure or solid ground).

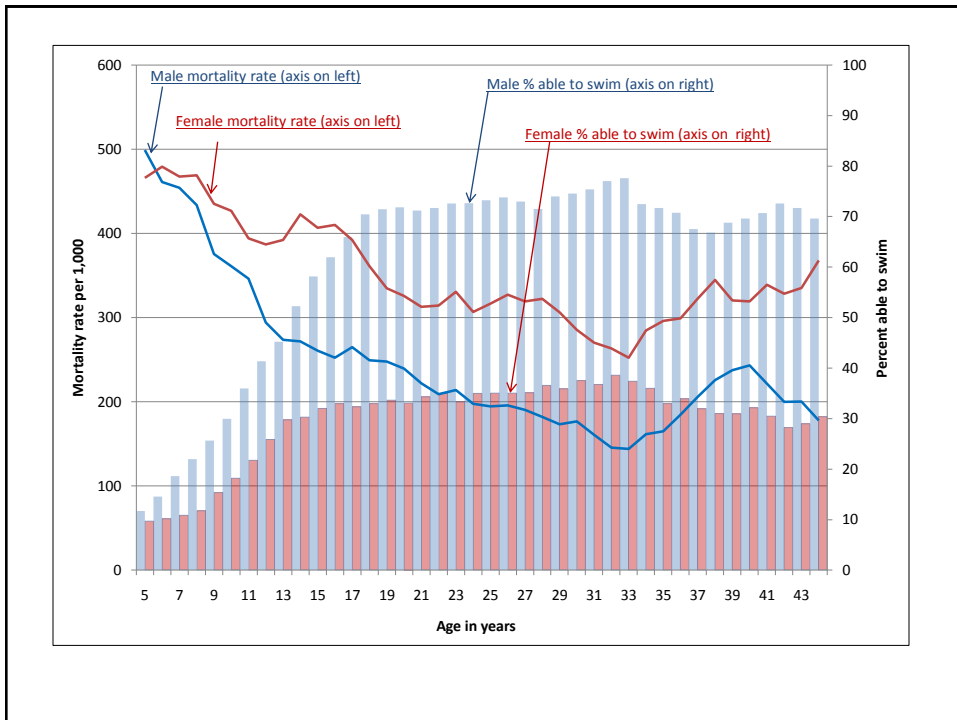


### Mortality by age and swimming ability



### Swimming ability by age and sex

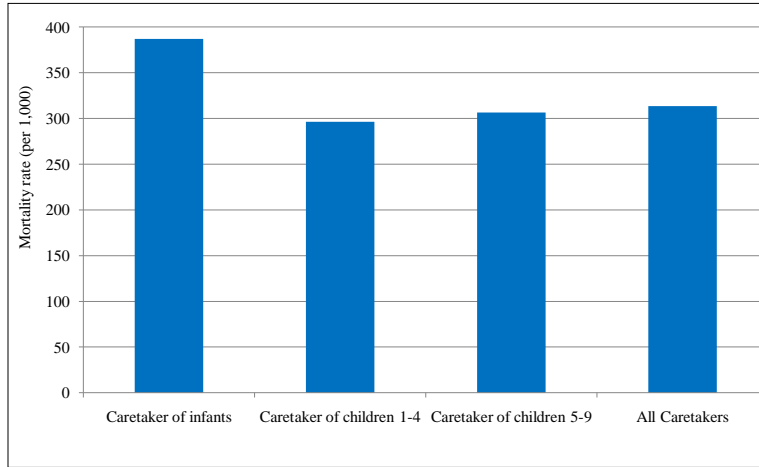




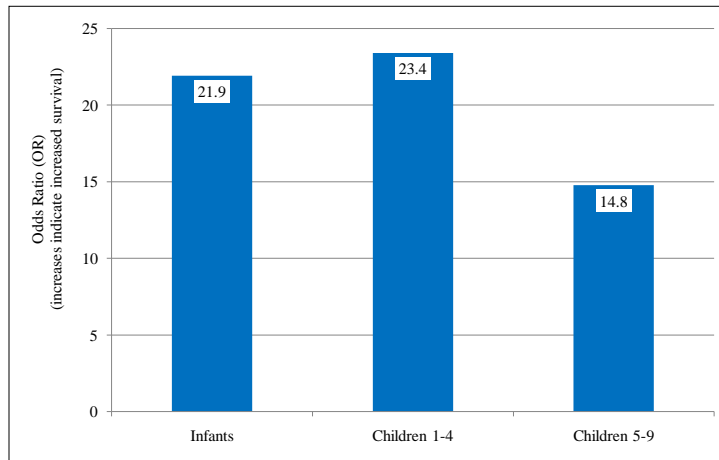
## Analysis

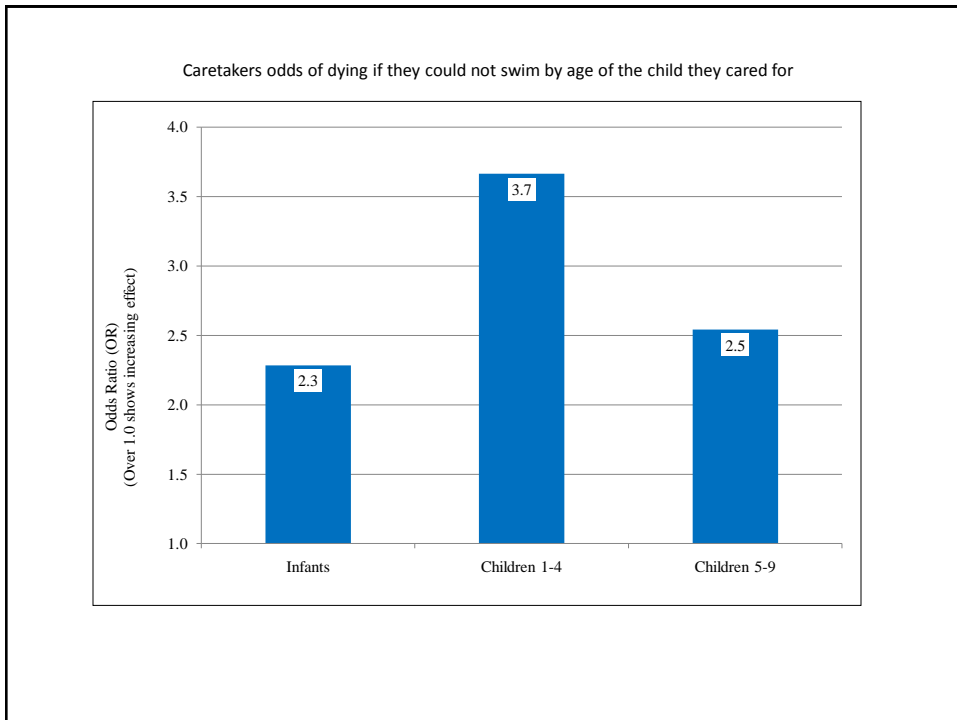
- Crude analysis for mortality and odds ratio for death within each zone of habitation for each variable collected
- Statistically significant factors were included in logistic regression model: these were age, sex, swimming ability, distance from the coast, location at time of tsunami, survival behavior used, and if a child was involved, whether the child's caretaker was present and if that caretaker was able to swim
- Variables which did not show significant associations with outcome for children and caretakers were not included in the logistic regression model. These were occupation, education level, construction materials of the household and clothing worn.

Mortality rate by age group of child for caretaker of that child



Childs odds of surviving if their caretaker survived according to child's age





## Conclusions

- For adults who were caretakers of children, being able to swim increased their odds of survival between two and three times according to the age of child being cared for
- For infants and children under 10 years, there were very robust associations with survival if their caretaker were able to swim:
  - Infants                    21.9
  - Children 1-4            23.4
  - Children 5-9            14.8
- Teaching caretakers to swim may be a potential strategy to increase survival of the child being cared for in an aquatic disaster setting

Thank you

