

Table 3. Severity of Traumatic Brain Injury in 1030 Cases by Causes of Injury

	Severity			Total	<i>p</i>
	Severe (3-8) (%)	Moderate (9-12) (%)	Mild (13-15) (%)		
Cause of injury					0.000
Falls	24 (4.1)	50 (8.5)	512 (87.4)	586	
Traffic injuries	28 (11.6)	39 (16.2)	174 (72.2)	241	
Assaults	2 (9.5)	3 (14.3)	16 (76.2)	21	
Others	4 (3.4)	10 (8.4)	105 (88.2)	119	
Traffic injuries					0.065
Motorcycle related	12 (16.2)	12 (16.2)	50 (67.6)	74	
Bicycle related	1 (4.2)	1 (4.2)	22 (91.6)	24	
As a pedestrian	11 (12.8)	12 (14.0)	63 (73.2)	86	
Automobile related	4 (10.5)	10 (26.3)	24 (63.2)	38	
Others	0	2 (11.8)	15 (88.2)	17	
Falls					0.000
Fall from a great height (> 1m)	13 (12.5)	22 (21.2)	69 (66.3)	104	
Fall from a low height ($\leq$ 1m)	3 (1.5)	14 (7.1)	180 (91.4)	197	
Fall from the same level	5 (2.3)	8 (3.6)	207 (94.1)	220	

The severity of TBIs in preschool children showed a significantly different demographic profile in subjects with either moderate or mild injury in terms of etiology ($p < 0.001$). Severe injuries accounted for a higher proportion in the traffic injury group (11.6%) than in the group of assaults and others. Variations among severity of injury levels and traffic injuries were statistically significant ($p < 0.01$). In the severe injury group, the motorcycle-related injury rate was higher than that in other injury groups. There were also significant differences among severity of injury levels and falls ($p < 0.001$) (Table 3).

DISCUSSION

The aim of this study was to discover the distribution and determinants of TBI in preschool children in Taiwan. This study collected more than 1000 cases of TBI during a recent 3-year period with the purpose of establishing a data bank for designing preventive strategies for TBI in preschool children in Taiwan. The incidence rate and mortality rate of TBI were not emphasized because non-hospital deaths were not included in this study.

In our study, there were some differences between

boys and girls with TBI, as the male-to-female ratio was 1.67:1, which is in keeping with most other studies throughout the world.²⁷⁻³¹ The higher incidence of boys could be attributed to their more adventurous and aggressive behavior.

Falls and traffic injuries were the most common causes in other studies, accounting for approximately 3/4 to 4/5 of all TBIs in those studies.³²⁻³⁶ The results of this study also show that the main causes of TBI in preschool child were falls and traffic injuries, which accounted for about 85% of the total. Falls and traffic injuries were both main causes of TBIs in preschool children, especially in the younger group (1-3 years old). As the children aged, traffic injuries became greater. This is most likely due to the fact that older children spend more of their time outdoors, either playing or taking trips to and from school, whereas younger ones are more often confined indoors. Jamison³⁷ found that windows and stairs are still dangerous places for children, especially for 0-4 year olds, and the number of pedestrians involved in traffic injuries emphasizes the vulnerability of children on the street. This may be due to the relative underdeveloped of strength and coordination during early childhood.

The United States Coma Data Bank³⁸ and the Na-