

Brief communication

Epidemiology of Head Injury in Taiwan Area

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Trauma is the leading cause of death for those under 40 years of age in Taiwan and western countries. What is more, survivors from head injury frequently have severe neurological sequelae and require prolonged hospitalization and sophisticated aftercare.

An epidemiologic study in Taiwan, a developing country, is of critical importance because of a very rapid increase in the number of motor vehicles owing to rapid industrial and economic growth during the past 20 years. The current study was based on a head injury registry in Taipei City (urban population) and Hualien County (rural population) using a standardized definition, case ascertainment and severity scale during the period from July 1, 1987 to June 30, 1988.

The age-adjusted incidence rate of head

injuries was 177/100,000 for Taipei City and 329/100,000 for Hualien County. The highest incidence was observed in the age group of more than 70 years, followed by the group of 20-29 years. These data show certain differences compared to those reported from western countries. Eighty-two percent of head injuries in Hualien County and 68% in Taipei City were caused by traffic accidents, and among them 71% in the former and 60% in the latter were directly related to motorcycle use. These were the highest rates that have ever been reported (Fig. 1). The age-adjusted mortality rate was 88/100,000 in Hualien County and 21/100,000 in Taipei City (Fig. 2). Using the Glasgow Outcome Scales, the outcome of the head injuries in these two areas appeared worse compared with that in other studies (Table 1). The elder

Table 1 Comparison of GOS with other Studies Non-hospital Deaths Excluded

	Taipei	San Diego	Trodelag	Hualien
Inhospital Death(1)	6.7%	5.9%	2.8%	11%
Vegetative(2)	1.1%	0.9%	0.09%	3%
Severe Disability(3)	3.7%	1.2%	0.4%	2%
Moderate Disability(4)	6%	2.6%	2.2%	15%
Good Recovery(5)	76%	89.8%	94.5%	69%

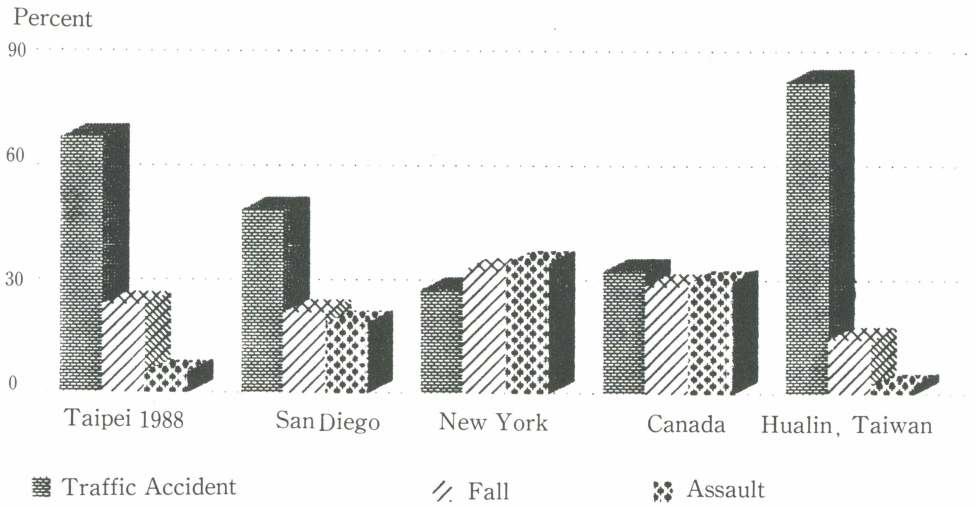


Fig. 1. Comparison of 3 Main Causes of Head Injury in 5 Studies

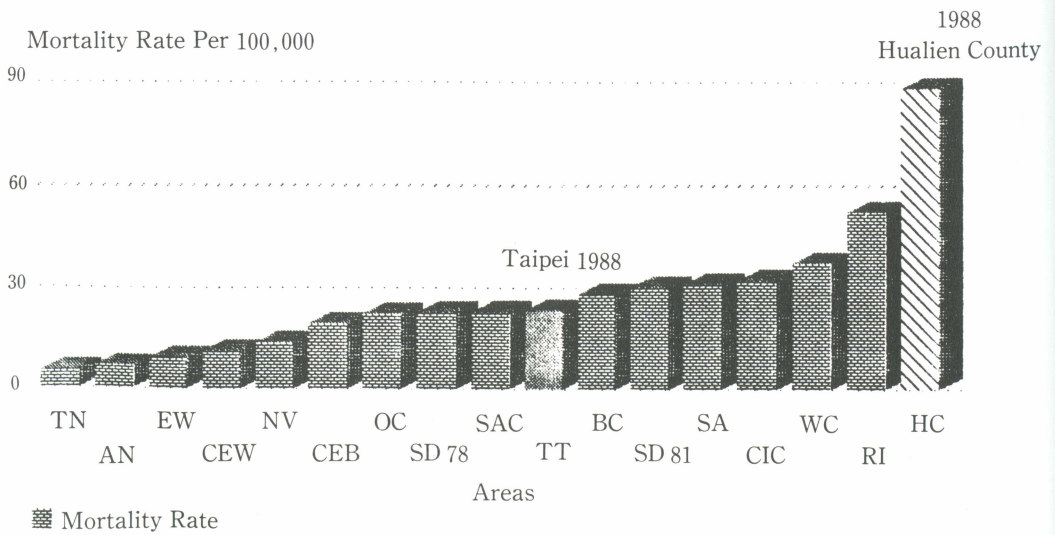


Fig. 2. Mortality Rates in Selected Studies Per 100,000, By Areas

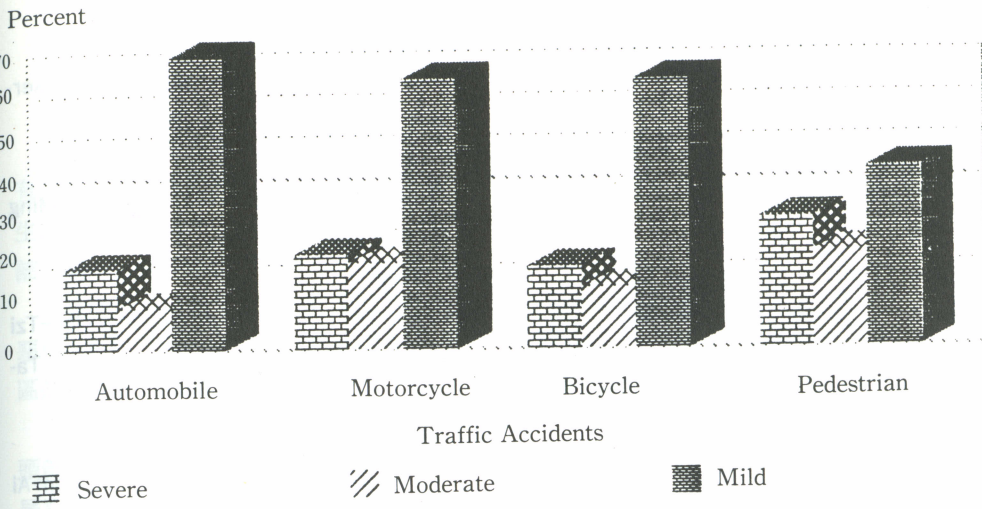


Figure. 3. The Preportion of the Diffetent Degrees of Severity in 4 Patterns of Traffic Accidents

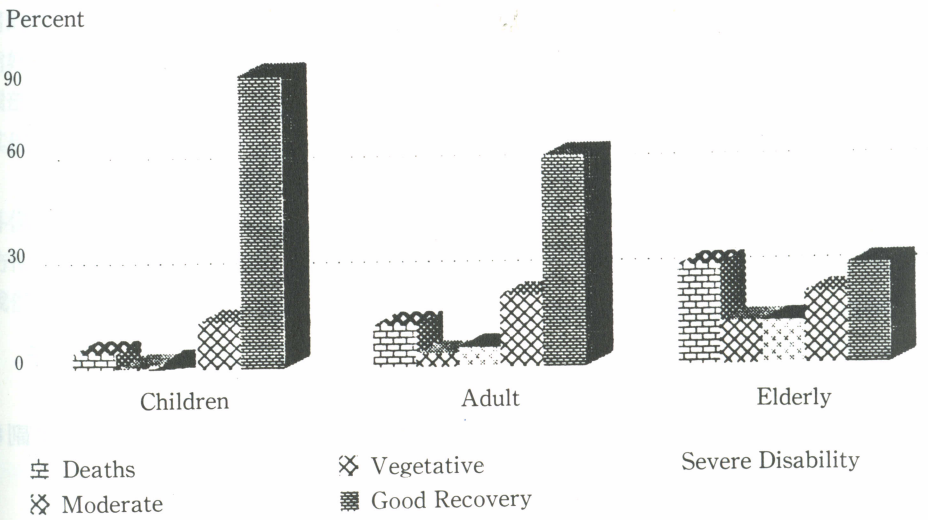


Figure. 4. The Proportion of the Different Outcome (G. O. S.) in S Age Groups

group presented with the worst outcome (Fig. 3). Victims of motorcycle accidents and pedestrians appeared to suffer more severe injuries as compared to those associated with automobiles and bicycles (Fig. 4).

Apparently, the extraordinarily high rates of traffic accidents, especially motorcycle accidents, were the leading cause of head injuries in Taiwan area. Every attempt should be made to decrease the magnitude of the problem.

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臺灣地區頭部外傷流行病學之研究報告

中華民國神經學學會頭部外傷研究小組

在臺灣及西方國家中，外傷佔所有 40 歲以下人口死因的第一位，而這些因外傷所引起的死亡中有一半以上是由於頭部外傷所造成的。雖然多數的頭部外傷病人在受傷後存活了下來，但他們所產生的意識、精神及各種神經後遺症，對醫療資源及國家經濟卻造成很重大的負擔。也更由於這些頭部外傷病人大多是正從事生產的青、壯年人，其影響將更為深遠。

臺灣地區近幾年來，由於工商業的迅速成長，機動車的急速增加(尤其機車)及治安交通的急劇惡化，頭部外傷問題的研究將更為迫切。因此我們乃擇定代表城市地區的台北市及較趨向於鄉村地區的花蓮縣作為研究對象，以期能了解臺灣地區頭部外傷的整個概況，作為將來防治的參考。

從 1987 年 7 月 1 日至 1988 年 6 月 30 日期間，所有台北市及花蓮縣所有主要醫院(有能力治療頭部外傷者)的臨床記錄均經詳細察閱，而未達醫院即死亡的病例，則由死因資料卡、驗屍官或警察局記錄取得。頭部外傷病人的認定是採用嚴格的國際化頭部外傷定義來確認。

一年間，兩地頭部外傷的年齡調整後發生率分別是台北市 177/100,000；花蓮縣 329/100,000，男性各約為女性的 2-3 倍。所觀察到的發生率在台北市以老人人口群最高，而 20-29 歲人口層次之；花蓮地區則亦以老人人口群最高，均與西方國家相當的不同。驚人的是花蓮地區有八成以上的頭部外傷是由交通意外而引起，台北市則為六成以上。而其中近七成直接涉及機車的使用，此均為目前已發表的世界計錄最高者(附圖 1)。年齡調整後之死亡率花蓮為 88/100,000，台北市為 21/100,000(男性各為女性的 3-4 倍)，均高於其他報告(附圖 2)。至於嚴重度與結果均採用國際通用的表格評估(如 GCS, GOS)。其結果顯示花蓮地區頭部外傷較為嚴重且結果非常壞，台北市情形稍好些，但兩地與世界其他地區比較均顯示結果甚為惡劣(表 1)。值得一提的是兩地均發現行人的頭部外傷較為嚴重，其次則為機車騎士(附圖 3)。老年人口群其頭部外傷程度、結果及死亡率均較其他年齡層為高(附圖 4)。

很顯然的，從本研究初步的研究結果可以看出臺灣地區，不管是鄉村或城市，均是世界上頭部外傷最嚴重的地區。造成此種結果的原因很複雜，可能和醫療、環境、交通等規劃有密切關係，其防治也需要作多層面的考慮。但最重要的是應鼓勵以更積極的態度來面對這個常久被忽視的問題。我們以後將會提出詳細的報告。