

# **Head injuries in adolescents in Taiwan: a comparison between urban and rural groups**

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## **Abstract**

**BACKGROUND:** Data pertaining to head injuries in adolescents in Taiwan are scarce. The purpose of this study was to investigate the trend and pattern of head injuries in adolescents in both urban and rural areas in Taiwan. **METHODS:** We collected data from major hospitals in the urban (20) and in the rural (4) areas of Taiwan for a period of 3 years. Data were obtained from the Head Injury Registry, a 10-year electronic database of head injury in Taiwan. The inpatient medical records of adolescents with head injury were thoroughly reviewed. Severity of head injury was classified by the GCS score, and patient outcome at discharge from hospital was measured by the Glasgow Outcome Scale. Differences and correlation between study groups (13-15 and 16-18 years old) in the urban and rural areas were examined using 2-tailed t and chi(2) tests. **RESULTS:** A total of 469 head injury cases in the urban area and 131 in the rural area were identified. Traffic accidents were the major cause of head injury, and motorcycles were the most predominant vehicles causing traffic accidents in both urban and rural areas. Intracranial hemorrhages were the most prevalent injury pattern in the study population. In both urban and rural areas, the severities of injury were not significantly different ( $P=.184$ ), but the outcomes at discharge were significantly better in urban areas ( $P=.032$ ). The correlation between the initial GCS and outcomes in both areas was significant ( $P<.001$ ). Craniotomy was performed more frequently in the rural area than in the urban area (15.3% vs 7.2%). The mean hospital stay was shorter in the latter than in the former ( $P<.001$ ). Education on helmet use, input of neurosurgical staff, and facility and emergency medical transportation service of head-injured patients following guidelines proposed by the WFNS are crucial for head injury and better control in rural areas. **CONCLUSIONS:** The causes, patterns, and outcomes of head injury were statistically different between the 2 age groups of adolescents in urban and rural areas. Further studies on adolescent head injury are necessary.