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Cover Picture:
René Laennec (1781-1826):
inventor of the stethoscope
(Refer to pages 106-107)

Childhood injuries: prevention is always better than cure

T P Sim, K C Ng

Injuries are a global problem worldwide – occurring in all countries and continents. An estimated 5 million people died from injuries in 2000⁽¹⁾. These injury deaths occur in all countries, irrespective of income level. In high-income countries, road traffic injuries, self-inflicted injuries and interpersonal violence are the three leading causes of death for individuals aged 15 to 44 years. Among low- and middle-income countries, injuries in this age group are exceeded only by HIV infection/acquired immunodeficiency syndrome (AIDS) as the leading cause of death⁽²⁾. In the paediatric age group (younger than 15 years), war-related injuries account for more than one-half of the intentional injury deaths⁽¹⁾. Worldwide, injuries account for 12% of the global burden of disease.

Locally, almost a quarter of our population (23%) of 3.6 million is younger than 15 years of age. Childhood accidental trauma is now the 2nd commonest cause of death in Singapore children aged 0-14 years of age⁽³⁾, and is the commonest cause of death in the 1-44 year age group⁽⁴⁾. This is just the tip of the iceberg. Many more children suffer various injuries, with a wide spectrum of morbidity. To illustrate this point, in a recent five-year audit of a major local paediatric emergency department, there were 74,321 attendances for injuries, of which only 9,087 (12%) attendances required admission. Of those that required admission, only 232 (0.3%) patients were admitted for more than three days or had died. Of those that were admitted for three or more days or died, only 50 (0.006%) were considered to have major trauma (death or injury severity score of 11 or more)⁽⁵⁾.

Epidemiological studies to calculate the local DALYS (death and disability adjusted life years) attributed to trauma can give a better picture of the burden of disease. DALYS reflect the frequency of injuries and the fact that injuries occur more commonly to children and young adults. The time lost to parents and caregivers from the time they need to take care of the injured child plus many more emotional and social costs are just some more of the costs of childhood injuries. Childhood injuries have therefore become of major child health concern in Singapore.

In the two papers^(6,7) published in this issue of the Singapore Medical Journal, Thein et al looks both at the scope and nature of childhood injuries in the community through their nationwide survey as well as the knowledge, attitude and practices (KAP) of the primary caregivers. The home is the commonest place of accidental childhood injuries, particularly in the living room, with falls being the commonest type of injury. Almost 20% of the households surveyed had a child with an accidental injury in the preceding year. The playground was the next most frequent site of accidents. The authors also found that Malays and Indians had a higher injury rate compared to that of Chinese. They also looked at the relative

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safety of the households in the survey and found the home environment potentially liable to childhood injuries.

While the importance of road safety has been regularly drummed into our population, there has been less emphasis on home safety. It is time that we, as clinicians and healthcare providers, not just treat the injuries as they present to us but also question if they could have been prevented. In their complementary paper on the KAP of childhood injuries, Thein et al⁽⁷⁾ found good public awareness of road safety but less awareness about how to make the home a safer place for the child. There was also poor knowledge on first aid. Both papers^(6,7) support the need for us as healthcare providers to be more proactive advocates for child safety.

In the arena of childhood safety, we also need to be aware of the unique cultural practices of our community. The safety of baby walkers, alluded to in the paper, is just one example of this. Serious consideration needs to be given to the safety (or lack of it) of using sarongs at home. As healthcare providers, we need to advise parents and caregivers on the dos and don'ts of home and playground safety. The advice has of course to be tempered to a practical tone. We do not want to cocoon our children in a claustrophobic environment, instead we want them to grow and be nurtured in safe surroundings.

Many accidents "don't just happen". The traditional division of the aetiology of an injury as intentional and unintentional is blurring. Risk factors across all injuries have a great degree of overlap, regardless of intent⁽⁸⁾. As Singapore continues to evolve into a developed nation, healthcare issues will shift from just treating and solving medical and health issues as they arise to taking active preventive steps to deter these problems from surfacing in the first place.

However, unlike the previous years when attacking major infectious diseases of malaria, poliomyelitis, measles, diarrhoea, tuberculosis and other respiratory infections and recently, AIDS, had well-defined tools of immunisation, sanitation, and abstinence, this is not so with injury research and prevention. One of the problems in injury prevention is that we have not done as good a job as we should in developing effective and inexpensive interventions⁽⁹⁾.

The Haddon matrix is perhaps the most important tool in injury prevention⁽¹⁰⁾. Another tool is the spectrum of injury prevention advocated by Cohen of the Prevention Institute⁽¹¹⁾. The spectrum consists of strengthening individual knowledge and skills, promoting community education, educating providers of injury prevention, fostering coalitions and networks, changing organisational (law enforcement, health ministries, and schools) practices and finally, influencing policy and legislation.

Public health expert George Albee stated, "no mass disorder afflicting mankind is ever brought under control or eliminated by attempts at treating the individual or by attempts at producing large numbers of individual practitioners"⁽¹²⁾. Many begin their plans to prevent injuries to children and adolescents by considering only education aimed at changing individual behaviour. Such an approach often fails to achieve maximum success. It reinforces the commonly-held misconception that individual behaviour is solely responsible for health outcomes, and that individual health education is an adequate solution. Effective prevention is not that simple. The spectrum shifts attention from individually-focused health education to a systems approach.

It is time that we, as clinicians and healthcare providers, not just treat the injuries as they present to us but also question if they could have been prevented.

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The major causes of traumatic childhood deaths in Singapore (as in other developed countries) are well known: road traffic accidents, fall from heights (out of buildings), and drowning. In Singapore, the Traffic Police has purview of the first cause, while the Childhood Injury Prevention Programme has devoted its efforts to home injury prevention in its first year of inauguration⁽³⁾. Evaluated strategies are found in the literature^(13,14). Perhaps it is time for a unified systems approach. **SMJ**

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