Gender and Health
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Gender and Road Traffic Injuries

Worldwide, road traffic injuries caused more than a million deaths in 1998, and were the second leading cause of death among those aged 15-44 years. Eighty eight per cent of these deaths occurred in low and middle-income countries, where the majority of casualties were pedestrians, cyclists and riders of motorised two-wheelers. Although more than a quarter of all road traffic deaths occur in South-East Asia, Africa has the highest road traffic death rate (28.2) per 100,000 population.

Studies from developing countries indicate a steady increase in the number of road traffic accidents and in road traffic injury and fatality rates over the past few decades, as a result of increase of motor vehicles and traffic congestion. In Kenya, for example, the numbers killed as a result of road traffic injuries increased by nearly 6 times and non-fatal casualties by more than 5 times between 1962 and 1992.

What do we know?

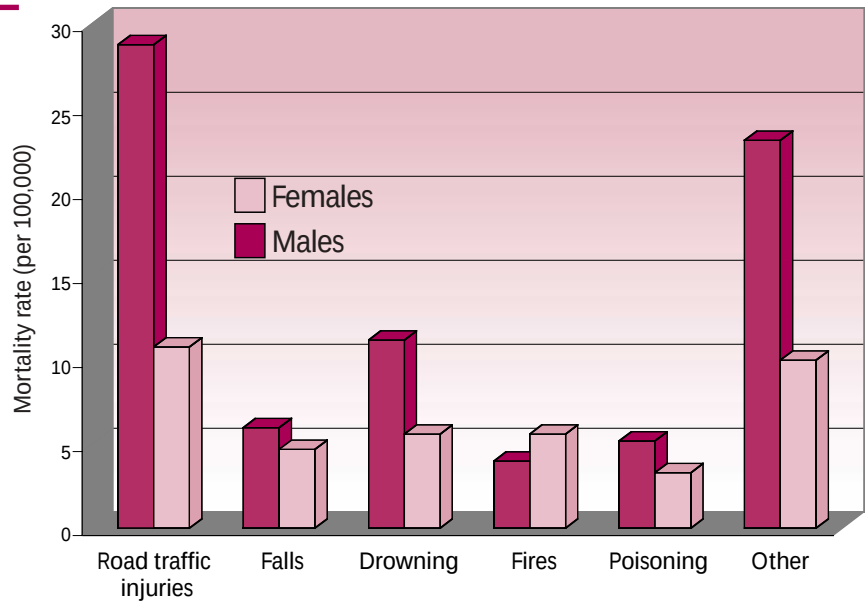
Higher rates of injury and fatality in males

Globally, almost three times (2.7) as many males as compared to females die from road traffic injuries, accounting for the largest sex differentials in mortality rates from unintentional injury (Fig 1).

In Barcelona[1], Spain, a large 6-hospital study found that 7 of 10 road traffic injury cases above the age of 14 years were among males, and the overall death rate was more than 3 times higher for men (26.0) than women (7.7).

Injury and fatality rates for males are higher for every category of road injury victim in several developing countries. In a 1997 hospital study in Kampala, Uganda, males outnumbered females among road injury victims by a factor ranging from 2 to 7 among pedestrians, vehicle occupants, motor vehicle and motor cycle drivers and

Figure 1: *Global mortality from unintentional injury, 1998*



Source: WHO. *Injury – A leading cause of the global burden of disease.* WHO, 1999

[1] These 6 hospitals receive 95% of all MVA victims in Barcelona, allowing population based estimates for the city (Plasencia 1995).

cyclists. Similar findings have been reported from Kenya and Ethiopia.

Higher male pedestrian fatalities have been reported from several industrialised countries. In USA, 70% of pedestrian fatalities are reported to be male, while in Singapore, the proportion was 61% during 1990-1994. There was a sharp increase in the proportion of males among pedestrian fatalities in Australia, from 69% during 1986-1993 to 78% in 1994.

Special risks among children and youth

Among child pedestrians suffering road traffic injuries, boys are usually involved in more incidents than young girls. A study from Australia suggests that this may be because boys are more likely than girls to cross streets unaccompanied by an adult.

Traffic collisions involving children on bicycles report higher fatality rates for boys. In Australia, the fatality rates for boys on bicycles were twice those for girls. All deaths involved moving vehicles, and most such collisions were attributed to unsafe cycling behaviour on the part of children.

In USA, where large numbers of teenagers are licensed drivers of motor vehicles, young men are at especially high risk, with road traffic fatality risks nearly twice those observed among young women.

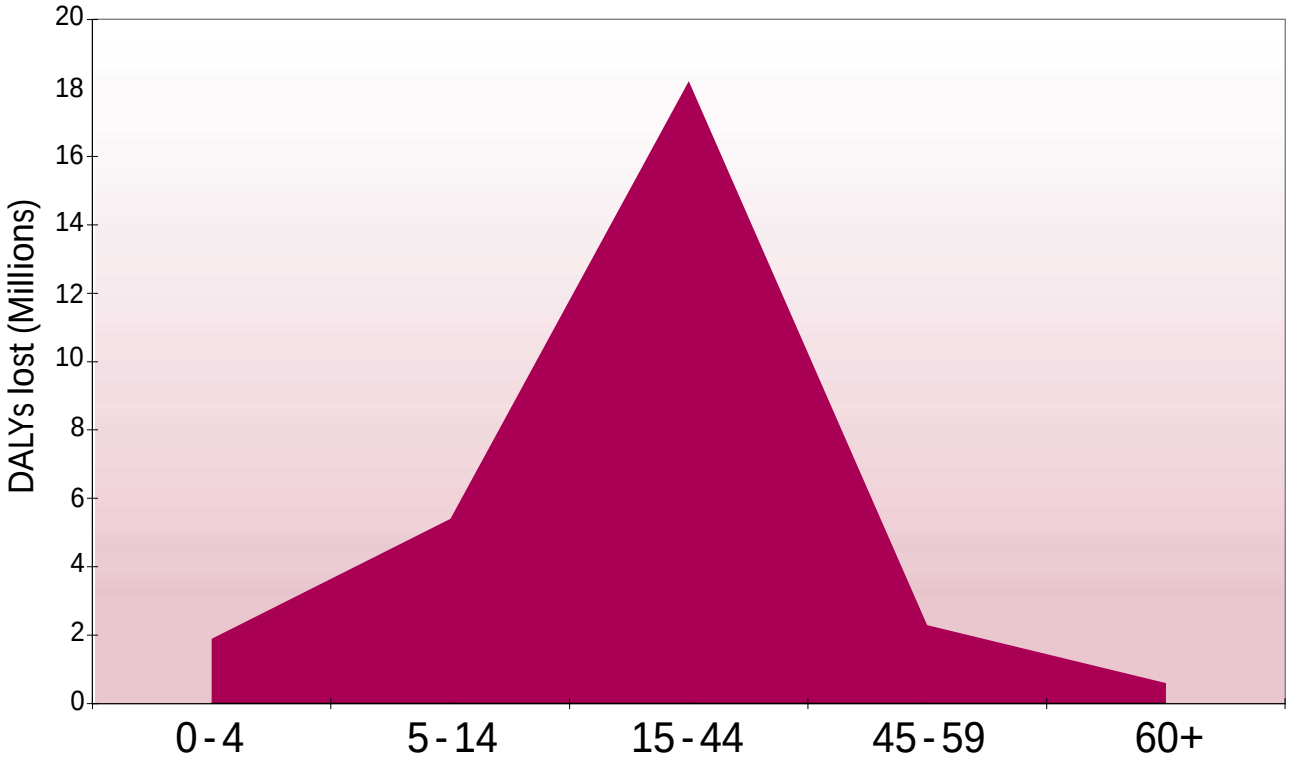
Elderly victims most vulnerable to serious injury and death

For pedestrians, risk of being involved in a collision, mortality, as well as need for long-term specialised care increases with age. This may also be true for vehicle occupants. According to a study from the USA, risk of death in vehicle occupants from similar crash forces increased steadily with age, with 70 year olds three times as likely to die from the same crash experience as a 20 year old.

Data for 5 developing countries (China, Colombia, Costa Rica, Mexico, Taiwan) from the 1990s show that those above 65 years had a higher rate of mortality from road traffic injuries, with rates for elderly males two to three times that for elderly females.

Figure 2: *Disability Adjusted Life Years (DALYs) lost due to road traffic injuries, Males, 1998*

Source: WHO. *Injury – A leading cause of the global burden of disease.* WHO, 1999



Smaller stature of women puts them at greater risk of lower body injury and death

If all other aspects of a given road traffic collision are held constant, women are at a greater risk of lower body injury because of their smaller stature. Studies of the frequency and severity of lower body injury found an excess of ankle/tarsal injuries among females, and follow-up research found this was due to sex differences in height.

Another recent study from the US reports that for age 20-35, female occupants of motor vehicles were 28-31% more likely to die than males from similar crash forces, because of their smaller body stature.

Gender roles and road traffic injuries

Higher male risk of road traffic injuries and fatality is associated to a significant extent with greater exposure to driving as well as to patterns of high risk behaviour when driving. On the other hand, higher male pedestrian injury and fatality rates appear to hold irrespective of time spent walking on the road, and are attributable to alcohol use and risky behaviour.

'Masculinity' may be hazardous to health

Gender role socialisation and the association of masculinity with risk-taking behaviour, acceptance of risk and a disregard of pain and injury may be factors leading to hazardous actions on the part of men. These include, for example, excessive consumption of alcohol, drug use, aggressive behaviour to be in control of situations, and risky driving.

Exposure to driving

In places where women's mobility is traditionally restricted, men may spend substantially more time in moving vehicles than women, and in all settings other than among the small economic elite, men are more likely to own cars than women. Men are also more likely to be employed as drivers and mechanics in cars and trucks, including long-haul vehicles which means spending several days and nights in the vehicle. This would result in a higher exposure to the risk of traffic injuries in male drivers of vehicles, which is clearly attributable to gender-based differences in male and female roles.

Alcohol use

- Data consistently show that men are more likely than women to be driving or walking on the road under the influence of alcohol.
- Studies from US and Kenya report that male drivers were far more likely than females to have been drinking prior to a motor vehicle accident.
- In the USA, alcohol use is implicated in approximately one-third of all fatal crashes involving teenagers, and the risks are greatest among young males.
- A national survey of Canadian youth reports that of those who reported drinking at parties, males were 3.5 times more likely to drive after drinking.
- In Sweden, more than twice as many male pedestrian fatalities during 1977-1995 tested positive for blood alcohol as compared to females.
- In a 1996 hospital-based study in Cape Town, South Africa, male pedestrians injured were twice as likely to be positive for blood alcohol than females, and had significantly higher mean blood alcohol levels than females.

Risky driving and risky pedestrian behaviour

- In a study of risky driving behaviour among 16-19 year olds in Georgia, USA, significantly more males reported driving 20 mph over the speed limit, passing a car in a no-passing zone, taking driving risks for fun and passing two to three cars at once on a two-lane road.
- In Athens, Greece, a study reported that female drivers and riders of motorcycles were significantly more likely to wear a helmet than men drivers and riders.
- In Karachi, Pakistan, males were observed to be significantly more likely than females to jump off a moving bus (43% vs. 1.6%), get on a moving bus (49% vs. 12%), and run to catch a bus (45% vs. 8%), all risky amidst heavy urban traffic.

Gender factors in health seeking behaviour and social/economic consequences

Limitations of transport, long distances to health facilities, and weak communication systems all

hinder health-seeking for acute conditions and for injuries. Gender differentials in access to health care for traffic injuries is likely to follow prevailing gender disparities for other *acute injuries* in the local setting. It has been suggested that acute accident care is similar to emergency obstetrics, and communities that cannot respond to one, cannot respond to the other.

There are likely to be gender differences in the social and economic consequences of temporary and/or permanent disability resulting from injury. Women may typically not be in jobs that have an adequate insurance coverage or allow for long duration of absence from work. They may not be able to pay for home-based nursing care, and for childcare and paid domestic help that may be needed because of their temporary or permanent impairment. On the other hand, because men are often the sole income earners in many households, injury and its consequences may adversely affect the household economy as a whole. Inadequate social and family support, financial difficulties and uncertainties related to employment are known to be associated significantly with high levels of psychological distress and long term stress following traumatic injury. In some settings, permanent disability from injuries may cause break-down of marriages and place women at risk of destitution.

What research is needed?

- Where appropriate data do not exist, there is a need to set up national injury surveillance systems, which provide age and sex-specific data on causes of road traffic injuries. There is also need for standardisation and sex disaggregation of existing data sets on traffic injuries, available in many developing and industrialised countries. The analysis of these data sets would help identify country-specific issues, monitor time trends and evaluate existing interventions.
- Research is needed to examine the potential benefits of gender and age-differentiated policies for issuance of driving licenses and related issues.
- Further investigations of the basis for excessive male risk-taking are warranted. Evidence of social effects (whether alone or in combination with biologic factors), may provide a rationale for political or voluntary restrictions of media or other structures which reinforce risky gender stereotypes.
- More research is needed on gender-differentials in access to health care and social support services by victims of road traffic injuries, and the long-term social and economic consequences to their lives.

What are the implications for policies and for injury prevention programmes?

- In light of findings to date, countries may examine the feasibility and effectiveness in terms of injury prevention, of legislative measures for graduated licensing, a higher age for licensing and for consumption of alcohol for males, and a policy of zero-tolerance for drinking and driving.
- Policy measures and interventions with a specific focus on vulnerable road users in low and middle income countries need to be developed and piloted.
- Interventions which challenge gender-role stereotyping of males as high risk takers and foster safe health practices, need to be designed and tested in a variety of settings. These need to be targeted principally at school-age children and adolescents of both sexes, but should involve older men and women as well, so that there is a supportive environment for boys and men adopting safer and non-risk taking behaviour.
- Positive behavioural changes may be best achieved through community based approaches which allow injury prevention messages to be repeated in different forms and contexts.
- Strategies for financing and organising the delivery of injury and trauma services need to be aware of gender differences in ability to access and to pay for health services for acute care as well as for rehabilitation.
- Gender differences in the social and economic consequences of temporary and/or permanent disability resulting from injury have to be taken into account when planning rehabilitation services.

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