

Speaking for Ourselves

Unhelmeted two-wheeler riders in India

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Nearly 54% of the vehicles but 90% of road fatalities in the world are in low- and middle-income countries, according to the WHO,¹ which has identified that wearing a standard motorcycle helmet correctly 'can reduce the risk of death by almost 40% and the risk of severe injury by over 70%' among motorized two-wheeler drivers and pillion riders. By the time you finish reading this article, someone riding on a two-wheeler in India without helmet would have lost their life in a road accident: 151 113 people died in road accidents during 2019—more than the 148 738 lives lost to Covid-19 in 2020²—and over a third of them (37% or 56 136 deaths) were among two-wheeler users.³ Non-wearing of helmets by two-wheeler users caused 44 666 deaths, and among them, two-thirds (30 148) were drivers and one-third (14 518) pillion riders.³

The Motor Vehicles Act (1988)⁴ made wearing of protective headgear compulsory for every person driving or riding in a public place under Section 129, with general provision for punishment of offences under Section 177. Subsequently, many state governments notified the Act and started enforcing it with low penalties. Recently, the Government of India has amended the Act and states have begun implementation with greater penalties (a fine of ₹1000 and disqualification from holding licence for a period of 3 months) as a deterrent for not wearing helmets.⁵

Following the amended Act, helmet use has increased over time, albeit slowly and still remains an urban phenomenon. Helmet use is generally higher among men who ride two-wheelers and has remained around 60% in Indian cities, with poor compliance in rural areas. Helmet use among pillion riders has also increased from the historical 0.6% rate before 1984⁶ to 58.7% in 2011,⁷ but this increase is largely due to male pillion riders (usage rate 88.4%) because the corresponding rate for females (0.6%) has hardly changed from the historical value ($p < 0.001$).⁷

It is clear that legislation is necessary but not sufficient for successful implementation of this health-related policy and to get closer to 100% helmet use among drivers as well as pillion riders of all genders. Poor compliance amongst women who typically constitute a third of the pillion riders makes them especially vulnerable in terms of poor outcomes and disability-adjusted life years lost.

From an implementation science perspective,⁸ there are a number of identified barriers and solutions, as summarized below, along with our own suggestions and observations:

1. *Exemptions*: The culture of exemptions is a barrier. While the aforesaid Act sensibly excluded turban-clad Sikhs, Delhi's 12 million women were exempted in 1999 on religious grounds before the state government reversed this decision in 2014.⁹ If anyone not wearing a turban is exempted, then it should be made clear as to how their needs are different from the general population. The new law encourages every driver and pillion rider to wear a helmet at all times of travel.
2. *Sensitivity and vanity*: Statements from government officials and activists reported in the press¹⁰ reveal that the real barriers could be the political sensitivity of the issue and apathy amongst riders and pillion riders, especially women who are worried about ruining their hairstyle and make-up. Thanks to greater education and employment opportunities, women travel as much as men today, so we need an urgent focus on their health and well-being. These factors are best addressed through health education and health promotion initiatives involving committed champions, including role models from various communities. The vanity issue may appear frivolous but is key to behavioural change and successful implementation.
3. *Practical and technological solutions*: It is also important to come up with practical and cost-effective solutions. In our view, technological solutions are important to make sure that helmets are lightweight and easy to carry; have brighter colours for improved visibility; allow greater ventilation; have good strapping mechanism; and can be securely locked in the two-wheeler. Use of non-standard helmets should be strongly discouraged because convenience and cost should not replace health and safety. Women who are worried about hairdo could be encouraged to wear a scarf or a hairnet under the helmet,¹⁰ although compliance may increase if there is a greater choice of hair-do-friendly helmets and weather-appropriate accessories. It is worth noting that temperature fluctuates more in cities such as Delhi, which has recorded extremes of -2.2 °C and 48.4 °C. Therefore, technological solutions should address comfort and safety as much as appearance and vanity, and the government could explore tax incentives to entrepreneurs and manufacturers to address the unmet needs in the market.
4. *Media and awareness*: A survey conducted in Bengaluru among 12 000 employees working in the information technology sector reported that generally riders wear helmets to not break the law and face penalties, even though more than 90% agreed with their protective nature. Similarly, a cross-sectional survey of 400 women in Pakistan found that 99% never wore a helmet as pillion riders, but 82% supported

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mandatory laws and 76% were likely to be influenced by television news because it is effective and informative.¹¹ Similar trends were also reported from India whereby 'New Delhi's women favour repealing their own exemption from mandatory helmet laws'.¹² These provide additional clues on the importance of legislation combined with targeted awareness campaigns. We also believe that the power of social media and behavioural sciences are underutilized in these markets. Pillion riders are likely to have head-and-neck injury if there is an accident, with those unhelmeted most likely to require intensive care and suffer in-hospital mortality.¹³ It is therefore important that targeted messages highlight the protective benefit of helmet use.

5. *Carrot versus stick*: Evidence from another study in Hyderabad, India, shows that the overall observed helmet use was 34.5%, albeit 44.5% of respondents reported that they 'always wear a helmet'.¹⁴ Therefore, it is important for policy-makers to account for overestimated self-reporting and to enhance enforcement through police presence. We believe that the increasingly widespread use of closed circuit television cameras could be used to issue automatic fines but will require legislative changes and technological investments. Some authors have argued for 'healthcare worker participation in legislative efforts to support implementation and maintenance of universal motorcycle helmet laws', because 'motorcycle advocates have challenged the implementation of these laws and directly influenced the weakening or frank repeal of these laws to negative consequence'.¹⁵
6. *Health economics and data*: With the average cost of helmets four to eight times the average fine, there is scope to increase the economic disincentive to subsidize the cost of helmets. More studies are also required to estimate the long-term costs of traumatic brain injury to justify funding for campaigns promoting the use of helmets. A comparison of experiences in mainland China versus Taiwan shows that helmet laws without adequate enforcement, punitive fines and a strong public awareness campaign are unlikely to succeed.⁷ As India is improving its data science¹⁶ and also taking steps towards establishing an integrated public health observatory,¹⁷ we are now better placed to make evidence-based policies and ensure their timely and effective implementation.

In summary, we believe that greater use of helmets requires a combination of ten key factors—political will, legislation, technology, advocacy, awareness, police training, visible

enforcement, higher penalties, health economics and good quality data. Implementation science and intercultural public health are critical to success. By increasing the adoption of helmets, we can prevent roughly 3 of every 10 road fatalities in India. A similar understanding is essential to address other risk factors for road injuries and deaths.

Conflicts of interest. None declared

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