

Road Traffic Accidents among the Young-Aged Riders in India

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Abstract

Road traffic accidents have emerged as the new public health challenge of the 21st century. There has been an unprecedented upsurge in the area of auto mobilization like never before in the post-liberalization era in India. With a population close to 1.37 billion people, India now faces the worst ever road congestion in most of the areas. Indian roads are the most vulnerable road in the world. Road traffic injuries are the sixth leading cause of death in India. It is imperative to comprehensively understand the underlying behavioural factors related to road traffic accidents. Literature related to traffic behaviour is sparse in India. The current paper intends to highlight behaviours & underlying determinants, which cause road traffic accidents (RTA). Drunken riding, cell phone usage & tailgating are some of the risky riding behaviour prominent among the young riders in India. The informed evidence from the current review can provide valuable leads to the policymakers at the local level to initiate targeted interventions.

Keywords- *Low and middle-income countries, Road crashes, Risky riding behaviour*

Introduction

Internationally, road traffic accidents (RTAs) have emerged as the latest public health challenge of the 21st century. Every year more than 1.2 million lose their life due to RTAs making it one of the leading causes of death worldwide¹. Around 90% of the RTAs occur in low and middle-income countries (LMIC) even though their contribution to the number of vehicles in the world is 54%^{1,3}. Road crashes have been identified as the leading cause of death among young people aged 15-29 years in the (LMIC)^{1,2}. Road traffic injuries result in a loss of 3% of GDP in LMIC¹. The global plan for a decade (2011-2020) of action for road safety has been drafted to channelize efforts at various levels to reduce the fatalities associated with RTAs globally. To this end, the essential data about RTAs has focused on high-income countries rather than vulnerable road users in LMIC^{3,4}.

In India, there has been an unprecedented upsurge in the area of auto mobilization like in the post-liberalization era. The roads which were constructed during the pre-liberalization era are not able to support the ever-increasing traffic load. One other point of concern is the

mixing of heavy vehicles with daily commuting vehicles on the road. There has been a construction boom in India due to rapid urbanization, and hence to support the logistics supplies of the site, heavy vehicles move around the city roads, making it much more vulnerable. With a population close to 1.37 billion people, India now faces the worst ever road congestion in most of the areas. The issues related to road safety in India is very diverse. It ranges from individual, environmental, infrastructure, awareness, poor implementation of laws & absence of graduated riding licensing program.

There has been an exponential increase in the number of RTAs in India from the last four decades and an increase of 9.8 times in the fatalities associated with that^{3,4}. According to the report published in the National crime records bureau, around 141,526 people were killed, and 477,731 were injured due to road traffic injuries in India⁴. Motorized two-wheelers consist of 70% of the vehicle population in India, and it is beyond any doubt that motorcyclists are the most vulnerable as far as RTA is concerned. In India, motorized two-wheelers account for the maximum share of RTAs with an increase of 26.3

% in 2013 to 27.3 percent in 2014 and 28.8 % in 2015⁶. The National highways, which run across the length and breadth of India, account for 28.4 % of the total RTAs and share of 35 % mortality associated with it^{5, 6}. The young riders in India contribute to maximum cases of mortality and morbidity due to RTAs.

Risky riding behaviour among the young-aged riders

Age and gender are significant predictors of adverse and aggressive riding outcomes. The personality of an individual has been associated with riding behaviour through risk perception. Personality-wise, young males and females are remarkably different. The young male riders are more likely to indulge in risky riding behaviour due to several factors such as reckless riding, drunken riding, mobile phone usage, helmet/seatbelt usage, peer pressure, triple riding in a two-wheeler, non-adherence to traffic rules, and irregular vehicular examination.

Drunken riding

According to the WHO, 3% of India's population consumes alcohol regularly¹. Alcoholism is always associated with violent crimes. It impairs the social judgment process and thereby promotes the probability of risky riding and violent behaviour. Drinking and riding promptly the predisposing psychological factors which affect individual riding behaviour and their subsequent decision-making process. With risky riding behaviour already evident in young riders, there can be preparedness of having alcohol before riding. To this end, 70 % of RTA in India is due to drunken riding. Drunken riding is reported high among the male riders in India. According to the Delhi based community against drunken riding (CADD), drunken riding is very much persistent in India, even though the persecution of drunken riding has increased in urban India^{7, 8}. The states in India where alcohol sale is banned like Gujarat, Lakshadweep, and Nagaland have recorded comparatively less number of accidents as compared to all other states where alcohol sale is not prohibited. Drinking alcohol and subsequent riding behaviours can be attributed to a lack of knowledge about the consequences of it, impulsivity, self-control, and lower

cognitive ability. In India, riders who drink and drive violate the law as they are mostly about it.

Cell Phone Usage

Cell phone usage while riding is a common sight on Indian roads. The use of cell phones while riding can overall impact the performance of the rider, response time to unexpected events, and the necessary situation awareness. Motorcyclists can be easily spotted using the cell phone by one hand and handling the motorbike with another hand or balancing the cell phone between ears and shoulder blades by leaning on one side. Cell phone usage while riding can create a precarious situation not only for the riders but also for the other commuters on the road. Age and gender are the critical determinants of cell phone usage while riding. Youngsters owing to their advanced mobile literacy rate than the older generations are more likely to use the cell phone for talking and texting while riding. A study conducted by Brusque & Alauzet⁹ young men receives or gives more than five calls a day while riding (Figure 1).



Courtesy-The Hindu-January 10, 2010

Helmet usage

The helmet is personal protective equipment (PPE), which is of importance for the motorcyclists against the head injury-related with RTA. Riding without a helmet is one of the quintessential risky riding behaviour observed among the motorcyclists in India, which accounts for most of the RTA injuries and fatality. The determinants associated with non-usage of the helmet by the motorcyclists on Indian roads are inadequate

information about the helmet, young age, lack of education, and failure in believing in its injury reduction value^{12, 13}. Despite the evident facts available about the viability of helmet as PPE while riding, the two-wheeler riders abstain from them. It is also observed that many female bike riders in India cover their head with “dupatta” instead of the helmet while riding (Figure 2).



Courtesy-The Times of India, 11th January 2011

Peer passenger influence

Peer passengers or the pillion rider on the motorbike can influence the riding behavior. A study conducted by Morton et al. reported that young and novice riders are more likely to engage in risky riding behaviour in the presence of a risk accepting or risk provoking passenger¹⁷. The young riders are more likely to be socially influenced by peer groups and friends. The risk of a crash is higher in the young riders carrying passengers as compared to the older riders. Age, sex, and riders related to the passenger effects the impact of influence on the riding behaviour for the passenger. Talking to the peer passenger divert the attention of the rider while riding as he is not fully able to concentrate on riding. The effect is much more profound if the peer passenger is spouse, female friend, or someone closely related¹⁸.

Tailgating

Tailgating is an act of riding on the road too close to the vehicle in front, such that the distance between the two vehicles does not guarantee that stopping to avoid a collision is possible. A study conducted by

Central Road Research Institute¹⁷, New Delhi, reported that the leading cause of tailgating is the eagerness to jump a red light, overtaking more heavy vehicles and getting delayed to reach the destination. According to the crash investigation project conducted jointly by the NATRiP and IIT Delhi, 45 % of the road crashes are due to tailgating⁴. Tailgating behaviour is more during peak hours as compared to the non-peak hours. Tailgating is more common among the male riders. Maintaining a safe distance from a vehicle is not considered to be an essential safety measure for many young and novice riders. Riders are not aware of the distance which they should maintain from the other vehicle for safe riding and minimizing the risk of crashes.

Unintentional risky riding behaviour & Antecedent's risky riding behaviour

An ideal riding practice can be disturbed in adolescent depending upon their physical and mental state while riding. Impairment such as colour blindness or poor eyesight, memory loss, mental disturbances like assignments, or work pressure leads to risky riding among them¹⁸. Negative and positive emotionality can accelerate the rash riding consequences in young adults. Accidents can be the outcome of anger, alienation, stress outburst, achievement, and social potency (influences)¹⁹. Physically stressed body due to adequate sleep, excessive workload, sedative drug medication, sleep apnea can alter the riding behaviour¹⁸.

The absence of parental monitoring and sensitizing about the ideal road safety practices among adolescents has been a major underlying factor for committing traffic violations¹⁶. Many studies have shown that parents and family riding practices and lifestyle have a significant role in the risky riding behaviour among their offspring¹⁸. The rate of risky riding behaviour among the children, irrespective of the gender, was associated with the parents having lower perseverance towards traffic rules and found with substance abuse while riding¹⁹. Parents play an essential role in the complex structure of risky riding practices in teenagers and the ones who have newly secured the learners' riding license. There is much research that supports the fact that the children of

the parents who are stricter with road safety and rules are less likely to commit traffic violations and have the best road safety practices^{15,16}.

Conclusion

There is no doubt that RTA had emerged as one of the significant public health threat of the 21st century. The vehicle population and traffic has witnessed an unprecedented rise in the last two decades. The current Motor vehicles act of 1988 with a slight amendment needs to be tailored to cater to the fastest-growing motorization in the second-most populous country in the world. Road safety and mitigations of the challenges posed by it needs a multidisciplinary approach. Many western countries, the concept of road safety is handled by the rainbow of professionals, which include doctors, engineers, psychologists, public health professionals, and sociologists. In India, by and large, it remains a domain in the realm of civil engineering. Risky riding among young riders is more of behavioural issues. This is the area where there is a scope of the intervention in the form of strict law enforcement, educational and community interventions, and graduated licensing programs. The young riders are mainly students who are frequent commuters on the road. Youths are the most valuable asset of any country, and any loss associated with RTA among the youth is having an immense social and economic impact. A rapidly developing country like India cannot afford to lose its most valuable resource. The concept of road safety needs a significant overhaul in India to meet the dynamic road safety challenges of the 21st century. Intervention can be done in the form of educational and community interventions, strict law enforcement, and graduated driver licensing programs.

Source of Funding- None

Conflict of Interest – Nil

Ethical Clearance- Not required

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