GLOBAL ROAD SAFETY PARTNERSHIP

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Reducing Alcohol Related Road Trauma

Overview

An extensive body of literature confirms that driving after drinking alcohol significantly increases the risk of a crash and the severity of that crash, resulting in deaths and serious injuries. In its 2023 Global Status Report on Road Safety[1], the World Health Organization (WHO) estimated that in high-income countries about 20% of fatally injured drivers have blood alcohol concentration (BAC) levels above the legal limit. Studies in low- and middle-income countries have shown that between 33% and 69% of fatally injured drivers and between 8% and 29% of non-fatally injured drivers had consumed alcohol before their crash.

Legislation should allow for police to conduct random breath alcohol testing of drivers at any time. Police should conduct widespread random breath testing as frequently as possible.

Key Facts

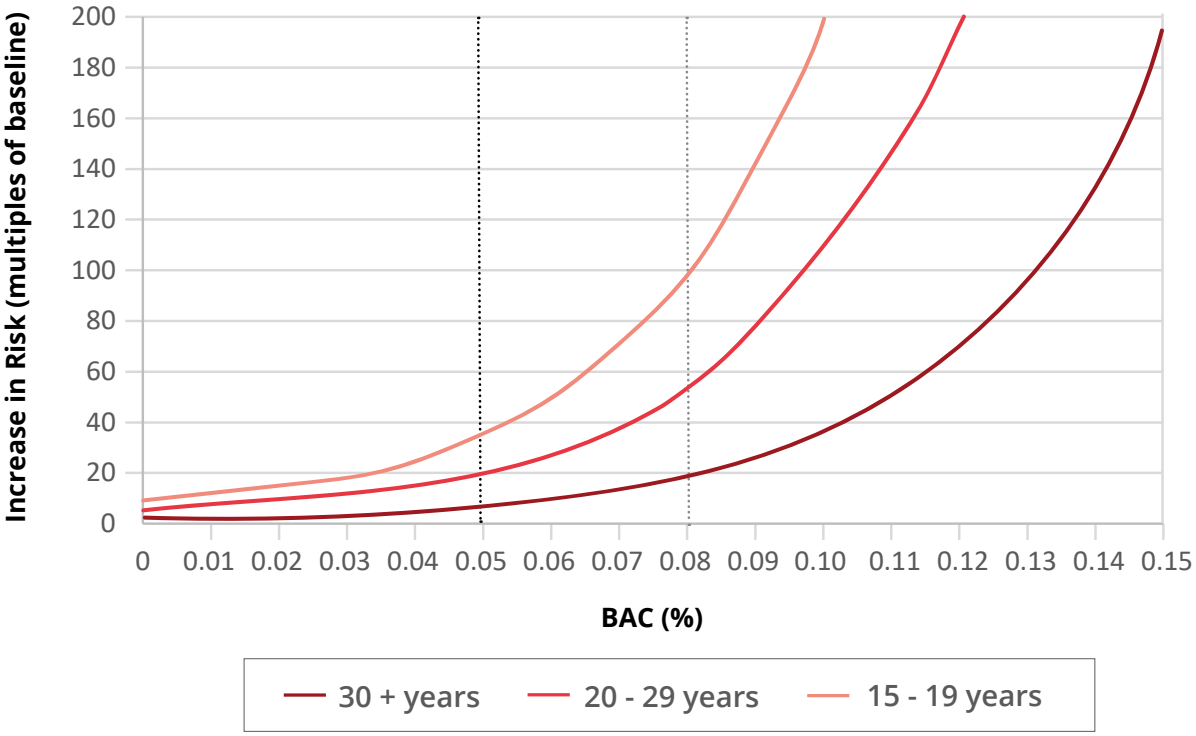
- **Global Impact:** Alcohol is a leading factor in road traffic deaths. In low- and middle-income countries, up to 69% of fatally injured drivers had consumed alcohol prior to the crash.
- **Risk Factors:** Even small amounts of alcohol impair judgment, reaction time, and visual acuity. Crash risk increases exponentially with blood alcohol concentration (BAC) above 0.04 g/dl[2].
- **Self-Reported Drink Driving:** The highest self-reported[3] drink drive rates are in Luxembourg (24.1%), Thailand (23.2%), and Mexico (20.5%) and the lowest rates are in Kyrgyzstan (1.2%), Armenia (3.4%), and Japan (3.5%) for drink-driving above the legal limit.
- **Economic Cost:** Drink driving accounts for a significant share of road crash costs. In the USA[4], it contributed $51.1 billion in 2000, equating to 22% of all crash-related economic losses (National Highway Traffic Safety Administration, 2001).

Reducing Alcohol Related Road Trauma

Alcohol Consumption and Crash Risk by Age

Many studies show that the risk of being involved in a crash increases as a driver's BAC increases. At high blood alcohol levels, the risk rapidly increases.

Figure 1. Relative Risk of fatal crash by blood alcohol level



The graph above shows the results of a New Zealand study of drivers involved in fatal crashes and their relative crash risk by age[5].

Impact of Lower BAC Laws

Evaluations of the impacts of lower BAC law changes are available from Sweden, Japan, Norway and Brazil. These evaluations showed that[6]:

- In Sweden the legal BAC was reduced from 0.05 to 0.02 in 1990. This was associated with a 10% reduction in all fatal crashes.
- In Norway the legal BAC was reduced from 0.05 to 0.02 in 2001. Evaluations did not find this was associated with a reduction in the crash outcomes, but increases in self-reports of not drinking before driving and in perceived social disapproval of drinking were evident.

Reducing Alcohol Related Road Trauma

- In Japan in 2002, the legal BAC was reduced from 0.05 to 0.03. This was associated with a 64% reduction in alcohol-related crashes involving teenagers, 50% reduction in alcohol-related crashes involving male adults and 52% reduction in alcohol-related crashes involving female adults.
- An evaluation assessed the effectiveness of lowering BAC limits, from 0.06 to 0.03 in Sao Paulo, Brazil. This found significant reductions in fatalities and serious injuries.

Impact of Random Breath Testing (RBT)

A wealth of research including meta-analyses and reviews, have examined the effectiveness of RBT in reducing crashes. Some examples of findings from the literature include[7]:

- A systematic review found a median reduction of fatal and injury crashes of 20% associated with such enforcement, with high visibility and community awareness of the enforcement activity being key contributors to success.
- A meta-analysis found a 17% reduction in alcohol related crashes associated with RBT or sobriety checkpoint programmes.
- A median reduction in fatal crashes of 22% was found in a review of the effectiveness of RBT programmes.

Effective Interventions

1. Legislation

- Establish national drink driving laws with BAC limits ≤0.05 g/dl for the general population and ≤0.02 g/dl for young/novice drivers.
- Enact and enforce compulsory breath testing laws that create severe penalties for any driver who refuses to provide a breath sample and mandate alcohol testing after crashes to ensure accountability.
- Implement tiered suites of penalties that reflect offence severity (e.g., high BAC levels or recidivism attract severe penalties)[8].

2. Road Policing

- **Random Breath Testing (RBT):** Proven to reduce drink driving by exposing all stopped drivers to compulsory testing.
- **Dedicated police units:** Undertaking high-visibility random breath testing and linked supporting public awareness programmes increase general deterrence.
- **Establishing targets:** Set minimum breath testing targets and maximise random and unpredictable testing at times and days of the week when alcohol impaired driving peaks so that impaired drivers can not predict where and when testing will occur.
- **General deterrence principles** – By following sound general deterrence practice known as 'Homel Principles[9]' whereby drink drive policing is highly visible, rigorously enforced, sustained and well publicised, the greatest impact can be achieved on deterring drink driving.

Reducing Alcohol Related Road Trauma

3. Public Awareness

- Directly link awareness campaigns with road policing for maximum impact[10]. Messages should focus on risks of being caught, social unacceptability, and severe penalties for offenders.

4. Technology-Based Measures

- **Alcohol Ignition Interlocks:** Devices preventing vehicle operation if BAC exceeds legal limits are effective in reducing reoffending during installation periods.
- **Advances in Passive Detection:** Emerging technologies like alcohol sniffers and transdermal sensors are promising.

5. Rehabilitation, Treatment and Awareness Courses

- Rehabilitation courses for young, repeat and high-end drink drivers are probably effective at curbing further drink driving offending, but success is dependent on several factors. The results of various rehabilitation and educational programmes are inconsistent, with some showing a positive effect and others finding none[11].
- Tailored alcohol treatment and education programmes can reduce recidivism, especially for dependent offenders who should be referred to treatment centres for alcohol dependence.
- Drink driver offender programmes should be based on best practice principles and focus on behaviour change. Having systems where offenders, especially repeat offenders, are referred to alcohol assessment and treatment is an essential component of managing drink drivers.

Reducing Alcohol Related Road Trauma

References

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