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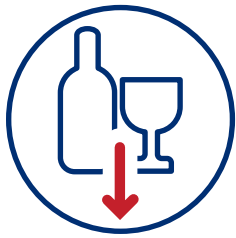
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International
Injury Research Unit

CONTACT

abachani@jhu.edu



Evidence Synthesis of Best Practices and Effective Strategies to Reduce Drink Driving



Key Findings

- Driving under the influence of alcohol significantly increases the risk and severity of a crash, resulting in fatalities and serious injuries.
- Even in quite modest amounts, alcohol impairs the functioning of several processes required for safe road use, and drink driving can result in severe crashes causing fatalities and serious injuries.
- Successful reduction of drink driving requires strong political commitment and strong, well-publicized, highly visible, and sustained enforcement (e.g., highly visible breath testing operations that result in swiftly applied and appropriate penalties).
- Setting blood alcohol concentration (BAC) limits according to best practices, random breath testing (RBT) and sobriety checkpoints to enforce BAC limits, and the use of alcohol ignition interlocks are proven to be effective interventions.
- Public education and marketing campaigns, if implemented alone, are ineffective strategies for reducing drink driving.



Recommendations

- Package different types of interventions, such as setting BAC limits according to best practices, using penalties that reflect the seriousness of the offense (e.g., higher penalties for higher BAC levels), conducting RBT to enforce BAC limits, and using alcohol ignition interlocks, to enhance their effectiveness in reducing road traffic crashes due to drink driving.
- Maximize the effectiveness of sobriety checkpoints by ensuring an adequate number of checkpoints are in place.
- Coordinate educational programs and public awareness campaigns with other interventions to increase their effectiveness.
- Conduct further research on the long-term results of using ignition interlock devices to reduce recidivism.



The Problem

Drink driving is a key risk factor for 27% of all road traffic injuries (RTIs), which in turn accounts for 10% of all road traffic fatalities.¹ The World Health Organization (WHO) approximates that 20% of drivers involved in fatal RTIs in high-income countries have excess alcohol in their blood, and in some low- and middle-income countries, this number can reach up to 69%.¹ Even at low BAC levels, drink driving affects concentration and coordination and reduces the ability to track moving objects. The risk of road traffic crashes increases significantly when the driver's BAC level is ≥ 0.04 g/dL.²



What we already know

Among the 166 countries that have a national drink driving law in place, only 48 countries have drink driving laws that align with best practices.¹ According to the WHO, best-practice BAC limits should be enforced at ≤ 0.05 g/dL for the general driving population and ≤ 0.02 g/dL for novice drivers.¹ Reducing BAC levels to 0.05 g/dL can reduce road traffic crashes that result in fatalities or injuries by 18%.³ Adoption of drink driving laws that meet WHO overall best practice criteria^{*} is more common in high-income countries (58%) compared with middle-income (40%) or low-income countries (2%).¹ RBT is used in 121 countries, and 101 countries utilize breath testing at checkpoints during specific times (e.g., during holiday periods when drink driving prevalence is expected to be higher).¹



Aim of the Review

This review aimed to synthesize the current global evidence on the role of various interventions, individually and in combination with other interventions, to prevent drink driving. Despite an abundance of evidence highlighting the negative health and economic outcomes of drink driving, the literature remains limited in providing comprehensive information on the most effective interventions to combat this global health issue. As such, this review aimed to provide a comprehensive overview of a) the various types of drink driving interventions, and b) evidence on the effectiveness of each intervention. The following inclusion criteria guided the selection of articles:

- Literature focused on drink driving in the context of RTIs and crashes.
- Publications in English.
- Articles with evidence related to the effectiveness of drink driving interventions in reducing RTIs and crashes and in improving compliance with legislation and/or enforcement, as well as the cost-effectiveness of interventions.

Articles were excluded if their abstracts were not available, if they only focused on educational interventions, or if they were opinion pieces.



Summary of Evidence

Interventions to prevent drink driving with evidence of effectiveness

| INTERVENTIONS | COUNTRY/REGION | EVIDENCE OF EFFECTIVENESS |
|---|--|---|
| Legislation | | |
| Drink driving legislation | Global (Kenya, Brazil, China, Mexico, Russia) | A multi-country analysis showed that instituting drink driving laws in five countries saved 92,485 lives during a period of 15 years (2008–2023). Drink driving legislation accounted for an 85% increase in lives saved when enforced in these countries. ⁴ |
| Enforcing the Recommended BAC Limits | | |

*WHO best practice criteria for the assessment of drink driving laws: i) the presence of a national drink driving law; ii) a BAC limit for the general population not exceeding 0.05 g/dL; and iii) a BAC limit for young and novice drivers not exceeding 0.02 g/dL.

| INTERVENTIONS | COUNTRY/REGION | EVIDENCE OF EFFECTIVENESS |
|---|---------------------------------------|--|
| RBT | Southeast Asia | RBT was the single most impactful intervention that helped gain an estimated 52,288 healthy life years per 10 million population. ⁵ |
| | Eastern Sub-Saharan Africa | RBT contributed to gaining an estimated 8,242 healthy life years per 10 million population. Additionally, when considering targeting multiple risk factors, RBT is an important contributing factor in the most cost-effective interventions along with enforcement of seat-belt use, motorcycle helmet use, and speed limits. ⁵ |
| | Australia | An RBT program resulted in an 11% reduction in road traffic fatalities in 1988. After being expanded the same year, the program reduced fatalities by 26%. ⁶ |
| Sobriety checkpoints | Thailand | Sobriety checkpoints (RBT or selective breath testing) in combination with mass-media campaigns were cost-effective. These interventions offset the cost of RTIs by an estimated 193 million Thai Baht (5.6 million in U.S. Dollars). ⁷ |
| | United States (U.S.), Thailand | Sobriety checkpoints reduced alcohol-related RTIs by 13%–27%. ⁷ Mass-media campaigns and sobriety checkpoints (for RBT or selective breath testing) are cost effective. These interventions can reduce the burden of alcohol-related RTIs by 24%. ⁷ |
| License Restrictions | | |
| Graduated driver licensing (GDL)[†] | U.S. | A 2010 analysis of U.S. fatality data demonstrated that GDL laws rated as ‘good’ compared to ‘poor’ were associated with 30% lower fatal crash rates among 15-17-year-olds, and were 11% lower if rated ‘fair.’ ⁸ Another analysis found even greater effects with a 58% reduction in fatal crash risk for 16-year-olds under stricter learner stage conditions and a 44% reduction under stricter provisional stage conditions. ⁹ |
| Offender Management | | |
| Offender programs | U.S. | In 2015, the Driver Education and Evaluation Programs (DEEP) in Maine evaluated motivation-enhancing (ME) care [‡] for offenders (called “Prime for Life, [§] ”) versus standard care [¶] and found that those who had completed the ME care had lower rearrest rates (7%) compared to those who received standard care (10%). ¹² |

[†]GDL programs vary in different countries and jurisdictions and include measures such as a reduced or zero BAC level, a minimum learner age and learner period, a minimum supervised practice hours requirement, a minimum provision period, peer passenger restrictions, night driving restrictions, phone/other technology restrictions, and vehicle power restriction.^{10,11}

[‡]Motivation-enhancing (ME) care or interventions included additional coaching and training and shared the following characteristics: using methods explicitly geared toward engaging participants, adopting a non-judgmental attitude, adapting to (rather than confronting) resistance, exploring ambivalence, facilitating participants’ recognition of their own reasons for change, emphasizing participants’ choices in change, and participants’ beliefs in their ability to make changes.

[§]Prime for Life is a group-based ME program implemented by DEEP for all offenders in Maine, USA.

[¶]Standard care is defined here as programming without an ME component in the context of the Prime for Life program implemented by DEEP.

| INTERVENTIONS | COUNTRY/REGION | EVIDENCE OF EFFECTIVENESS |
|-----------------------------|------------------|---|
| Alcohol ignition interlocks | U.S. | States that adopted ignition interlock laws, which required participation from first-time offenders, had a 9% decrease in crashes involving a drunk driver. ¹³ A 1% increase in the interlock installation rate was associated with a 0.06% decline in the recidivism rate among first-time offenders. When combined with other behavioral interventions, such as rehabilitative treatment, ignition interlock devices can impact behavior and attitudes, acting as a deterrence. ¹⁴ |
| | The Netherlands | The percentage of repeat offenders in the Dutch Alcohol Ignition Interlock Programme (AIIP) was lower than in the control group, which consisted of those who were not sanctioned with an AIIP but had their case settled in criminal court (OR=0.42, 95% CI=0.29-0.62; p < 0.001). ¹⁵ |
| | New Mexico, U.S. | A group of first-time offenders who were sentenced to install ignition interlocks had a 60% lower recidivism rate than the control group, in which offenders were convicted but did not have the ignition interlock system installed (p<0.0001). However, once the interlock device was removed the difference in recidivism was no longer significant. ¹⁶ |

Considerations for Implementation

Effective implementation of drink driving interventions requires consideration of key factors.

- It is critical to have a thorough and comprehensive understanding of the drink driving problem in a country. Periodic situational assessments should be carried out to inform the design of context-specific interventions to reduce incidences of drink driving. Key factors that support the design of effective drink driving interventions include:¹¹
 - Using available data to identify target groups.
 - Ensuring drink driving laws are clear and enforceable.
 - Enforcing laws fairly and firmly, with appropriate punishments to reinforce the risk of being caught and increase the perception of the certainty of punishment.¹⁷
 - Ensuring that public information supports the law and its enforcement.
- Planning a monitoring and evaluating process when designing a drink driving intervention can support its success and inform the design of future interventions. The evaluation findings should be shared with relevant stakeholders to support timely decision-making on resource allocation and intervention enhancements.
- Obtaining high-level support from relevant stakeholders is necessary for the successful implementation of drink driving interventions.

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