

CITATION

Johns Hopkins International Injury Research Unit. Evidence Synthesis on Interventions to Reduce Distracted Driving. March, 2024. Baltimore, MD.

CONTACT

abachani@jhu.edu






International
Injury Research Unit

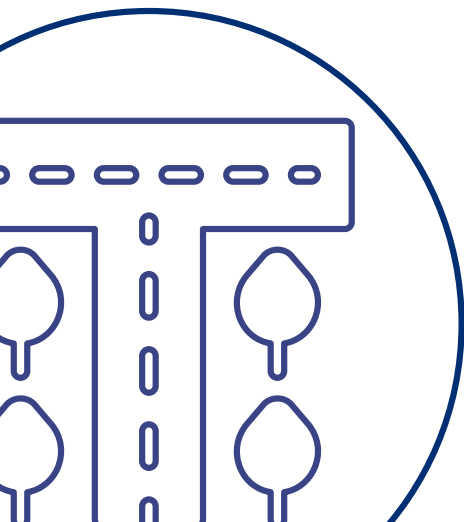
Evidence Synthesis on Interventions to Reduce Distracted Driving

Background

Despite the large burden of road traffic injuries (RTIs) resulting from distracted driving, there are insufficient studies that examine the effectiveness of legislation related to distracted driving. While 145 countries prohibit the use of hand-held mobile phones while driving, only 64 routinely collect distracted driving data through police reports and a few observational studies.¹

-  Youth and young adults are the most at-risk groups to be involved in distracted driving, likely due to their risk-taking behavior, influence of social media, and inexperience.^{2, 3, 4}
-  A study from Alberta, Canada showed that males were 40 times more likely than women to use mobile phones while driving.⁵
-  Pedestrians and bicyclists are common vulnerable road users that are involved in crashes caused by distracted driving.⁶

We set out to synthesize the data available on distracted driving, types of distraction resulting in road crashes, common risk factors, and recommendations on interventions aiming to reduce distracted driving.



In India, the observed use of hand-held mobile phones was **1.78** times higher on non-busy roads than busy roads.⁸

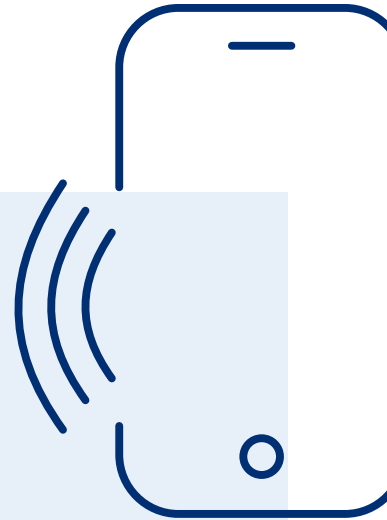
What Our Review Found

Key Findings

- The most common type of distraction among drivers is mobile phone use.⁹
- Mobile phone use while driving, whether hand-held or hands-free, increases the risk of a crash by four times, and texting increases the risk by 23 times. Driver reaction time is 50% slower when using a mobile phone compared to when not using a mobile phone.¹⁰

Recommendations

- Engage and coordinate with stakeholders at all levels of road safety planning and implementation.¹¹
- Develop data systems for the collection of data on distracted driving indicators.
- Develop mass media and community awareness programs, targeting youth and young adults, to promote healthy driving behaviors.¹²⁻¹⁸
- Implement vehicle and mobile communication technologies (e.g., advanced crash warning and driver-monitoring technologies, or mobile applications that temporarily disable mobile devices while a vehicle is in motion) to prevent driver distraction and enhance road safety while driving.¹⁹⁻²²
- Enhance enforcement through visible policing,²¹ and penalties that result in fines^{11,13,23,24,25} and/or suspension of driving licenses^{24,26} and setting high premiums and insurance rates for distracted young drivers.²⁶
- Automate enforcement through object-detection technologies (e.g., traffic cameras).²⁷
- Implement graduated driver licensing programs for young drivers before obtaining full driving privileges.²⁷



In Vietnam, around **10%** of students reported talking on a mobile phone on a daily basis while riding a motorcycle.²⁸

References

1. World Health Organization. (2018). Global status report on road safety 2018: World Health Organization.
2. Zatezalo, N., Erdogan, M., & Green, R. S. (2018). Road traffic injuries and fatalities among drivers distracted by mobile devices. *Journal of emergencies, trauma, and shock*, 11(3), 175.
3. Guo, F., Klauer, S. G., Fang, Y., Hankey, J. M., Antin, J. F., Perez, M. A., . . . Dingus, T. A. (2017). The effects of age on crash risk associated with driver distraction. *Int J Epidemiol*, 46(1), 258-265.
4. Cook, S., Boak, A., Hamilton, H. A., Mann, R. E., Manson, H. E., & Wickens, C. M. (2018). The prevalence and correlates of texting while driving among a population-based sample of Ontario students. *Traffic Inj Prev*, 19(7), 722-727.
5. Nurullah, A. S., Thomas, J., & Vakilian, F. (2013). The prevalence of cell phone use while driving in a Canadian province. *Transportation Research Part F: Traffic Psychology and Behaviour*, 19, 52-62.
6. Stimpson, J.P., Wilson, F.A., & Muelleman, R.L. (2013). Fatalities of pedestrians, bicycle riders, and motorists due to distracted driving motor vehicle crashes in the US, 2005-2010. *Public Health Reports*, 128(6), 436-442.
7. Oviedo-Trespalacios, O., King, M., Haque, M. M., & Washington, S. (2017). Risk factors of mobile phone use while driving in Queensland: Prevalence, attitudes, crash risk perception, and task-management strategies. *PLoS One*, 12(9).
8. Majji, Sumanth Mallikarjuna; AiswaryaLakshmi, A. S.. Epidemiology of Handheld Cell Phone Use While Driving: A Study from a South Indian City. *International Journal of Preventive Medicine* 9(1):p 29
9. Caird, Jeff K., Johnston, Kate A., Willness, Chelsea R., Asbridge, Mark., & Steel, Piers. (2014). A meta-analysis of the effects of texting on driving. *Accident Analysis & Prevention*, 71, 311-318.
10. NHTSA. (2020). National Highway Traffic Safety Administration. Distracted Driving.
11. Bowman, K., & Robertson, R. D. (2016). Preventable injuries/fatalities due to distracted driving: a call for a coordinated action. JOSP, Inc. JOSP, 1033 North Fairfax Street, Suite 304, Alexandria, VA.
12. Llerena, L. E., Aronow, K. V., Macleod, J., Bard, M., Salzman, S., Greene, W., . . . Schupper, A. (2015). An evidence-based review: distracted driver. *Journal of Trauma and Acute Care Surgery*, 78(1), 147-152.
13. Tucker S, Pek S, Morrish J, Ruf M. Prevalence of texting while driving and other risky driving behaviors among young people in Ontario, Canada: Evidence from 2012 and 2014. *Accid Anal Prev*. 2015 Nov;84:144-52. doi: 10.1016/j.aap.2015.07.011. Epub 2015 Sep 10. PMID: 26344898.
14. Unni, P., Morrow, S. E., Shultz, B. L., & Tian, T. T. (2013). A pilot hospital-school educational program to address teen motor vehicle safety. *Journal of Trauma and Acute Care Surgery*, 75(4), S285-S289.
15. Overton, T. L., Rives, T. E., Hecht, C., Shafi, S., & Gandhi, R. R. (2015). Distracted driving: prevalence, problems, and prevention. *Int J Inj Contr Saf Promot*, 22(3), 187-192.
16. Allee, L., Dechert, T., Rao, S. R., Crandall, M., Christmas, A., Eastman, A., . . . Foster, S. (2018). The Eastern Association for the Surgery of Trauma's Injury Control and Violence Prevention Committee's annual distracted driving outreach event: Evaluating attitude and behavior change in high school students. *Journal of Trauma and Acute Care Surgery*, 84(1), 31-36.
17. Classen, S., Winter, S. M., Brown, C., Morgan-Daniel, J., Medhizadah, S., & Agarwal, N. (2019). An integrative review on teen distracted driving for model program development. *Frontiers in public health*, 7, 111.
18. Alfallaj, I., & Dissanayake, S. (1999). The Effect of Distractions on Common Crash Types of Teenage Drivers in Kansas. *Journal of Transportation Engineering*.
19. Gliklich, E., Guo, R., & Bergmark, R. W. (2016). Texting while driving: A study of 1211 US adults with the Distracted Driving Survey. *Preventive medicine reports*, 4, 486-489.
20. De Gruyter, C., Truong, L. T., & Nguyen, H. T. (2017). Who's calling? Social networks and mobile phone use among motorcyclists. *Accident Analysis & Prevention*, 103, 143-147.
21. Pope, C. N., Mirman, J. H., & Stavrinou, D. (2019). Adolescents' perspectives on distracted driving legislation. *Journal of safety research*, 68, 173-179.
22. Sherin, K. M., Lowe, A. L., Harvey, B. J., Leiva, D. F., Malik, A., Matthews, S., . . . Committee, A. C. o. P. M. P. P. (2014). Preventing texting while driving: a statement of the American College of Preventive Medicine. *Am J Prev Med*, 47(5), 681-688.
23. Cheng, C. (2015). Do cell phone bans change driver behavior? *Economic Inquiry*, 53(3), 1420-1436.
24. Delgado, M. K., Wanner, K. J., & McDonald, C. (2016). Adolescent cellphone use while driving: An overview of the literature and promising future directions for prevention. *Media and communication*, 4(3), 79.
25. Nasr Esfahani, H., Arvin, R., Song, Z., & Sze, N. (2019). Prevalence of cell phone use while driving and its impact on driving performance, focusing on near-crash risk: A survey study in Tehran. *Journal of Transportation Safety & Security*, 1-21.
26. Hill, L., Rybar, J., Styer, T., Fram, E., Merchant, G., & Eastman, A. (2015). Prevalence of and attitudes about distracted driving in college students. *Traffic Inj Prev*, 16(4), 362-367.
27. Simpson, H. M. (2003). The evolution and effectiveness of graduated licensing. *Journal of Safety Research*, 34(1), 25-34.
28. Adeola, R., Omorogbe, A., & Johnson, A. (2016). Get the message: a teen distracted driving program. *Journal of trauma nursing*, 23(6), 312-320.