

Mobile phones and driving

Sandeep Johal, Fiona Napier, Jenny Britt-Compton
and Tim Marshall

Abstract

Prior to the introduction of legislation in the United Kingdom, observational road-side studies showed that approximately 2 per cent of drivers use a mobile phone while driving. We studied the change in the usage rate of hand-held mobile phones from 10 weeks before to 10 weeks after the legislation came into force in December 2003. Across three different sites during the evening rush-hour, the usage rate changed from 1.85 to 0.97 per cent, a reduction of almost half. This change is attributed to the legislation. The effect of the legislation on accident and injury rates is unknown.

There have been several measures introduced to try to reduce road traffic accidents, and the consequent harm to drivers, passengers and other road users. In successive decades in the United Kingdom such measures have included: drink-driving restrictions; seat-belt legislation; and the requirement for motor cyclists to wear helmets. The latter two were aimed at reducing the severity of injuries sustained in a road traffic accident; the former was aimed at reducing the chance of an accident in the first place. The most recent such development was in banning the use of hand-held mobile phones whilst driving, over which the relevant legislation was introduced in the United Kingdom in December 2003.^{1,2} We conducted a study to assess the change in use of mobile phones whilst driving, at three sites in Birmingham during the evening rush hour.

A pilot study showed that the use of hand-held phones was higher in the evening than the morning rush hour. Three sites were chosen: a traffic-light T-junction (A); a pedestrian crossing (B); and a roundabout (C). On four successive Tuesday evenings between 5 and 6 pm in September/October 2003, observers stood on the opposite side of the road and counted the number of motor vehicles passing, and the number where the driver was using a mobile phone. This was before the Department for Transport had begun a publicity campaign about the forthcoming legislation. The same observers returned to the same sites in late February/March 2004 to record the same information. The results are shown in Table 1.

There was a statistically significant fall in the rate of mobile phone usage at two of the three sites from before to after the introduction of the legislation, and a nearly significant reduction at the third. It is difficult to think of any explanation for the reduction other than the introduction of the legislation. How

far the change in mobile phone use was associated with changes in accident rates at these three sites is unknown. At all three sites in rush hour traffic moves slowly, so that any accidents would consist of minor bumps and shunts rather than events involving personal injury which are required to be reported to the police. Nevertheless, it is reasonable to conclude that at these sites and times, and between the two periods of observation, mobile phone use by drivers fell by about 50 per cent. If this reduction were replicated in other road contexts, it is likely that the overall accident rate would fall, including accidents involving personal injury.

Contributions of authors

T.M. thought of the idea. S.J., F.N. and J.B.-C. did the pilot study, identified the observation sites, and carried out the observations. S.J., F.N. and J.B.-C. wrote the first draft and

Table 1

Mobile phone use	Sites					
	A		B		C	
	Y	N	Y	N	Y	N
Before	54	3390	119	3852	60	5092
After	22	3479	61	4017	30	3997
Relative risk (after/before)	0.4		0.5		0.64	
chi-square	13.31		20.05		3.68	
p-value	0.00027		<0.0001		0.055	

Heterogeneity test for uniform relative risks: chi-square = 1.97, $p = 0.373$.
Combined risk ratio = 0.51, 95% CI = 0.41–0.63.

Department of Public Health and Epidemiology, University of Birmingham, Birmingham B15 2TT

Sandeep Johal, Medical Student

Fiona Napier, Medical Student

Jenny Britt-Compton, Medical Student

Tim Marshall, Senior Lecturer in Public Health and Epidemiology

Correspondence to Tim Marshall.

E-mail: t.marshall@bham.ac.uk

T.M. the final one. S.J., F.N. and J.B.-C. hold the raw data, to which T.M. has access.

Conflicts of interest

None.

Funding source

None.

Ethics

Ethical committee permission was not required.

References

- 1 The Royal Society for the Prevention of Accidents. *The risk of using a mobile phone while driving*. Birmingham: DTLR, 2003.
- 2 'THINK! Road Safety' UK Department of Transport. Available at www.thinkroadsafety.gov.uk/mobile-campaign/factsheet/index.htm (last date accessed 7 September 2003)