

Is using a car phone like driving drunk?

Donald A. Redelmeier and Robert J. Tibshirani

Chance Magazine, Spring 1997, pp.5-9

The authors discuss a study they carried out which was reported in the New England Journal of Medicine (Feb 17, 1997) and discussed in Chance News 6.03. This article discusses interesting aspects of the study that would not appear in a technical article. For example, they were cautioned by friends about carrying out the study since it could effect large companies' sales. They point out that the cellular phone companies in North America have significantly greater daily revenues than Microsoft.

The design the authors used for their study, called the case cross-over design, is relatively new. It is a case control method where the controls are the same people as the cases. The authors considered 699 drivers who had had an accident. They compared the proportion of those who used their phones in the ten-minute period before their accidents (24%) with the proportion of those who used them while driving during the same time period the day before the accident (5%). Summary statistics led to a relative risk of 6.5 for using a phone while driving. The authors explain why they rejected the use of more standard methods that had been used in previous studies and which, they felt, led to biased results.

They also discuss some issues involved in the media attention that the study received. They provide a cartoon from the Philadelphia Inquirer, suggesting that the danger of driving with a telephone should be compared to driving while drunk. Most writers included a statement similar to that of Gina Kolata in her article about the study in the Times. Referring to the risk of driving while talking on the telephone she writes:

Their paper, published today in "The New England Journal of Medicine," said it was the same risk as when a person's blood alcohol level was at the legal limit.

The authors did say in their article “the relative risk is similar to the hazard associated driving with a blood alcohol level at the legal limit.” However, they point out in this article that the dangers of alcohol are, in fact, quite a bit larger. For example, a drunk driver’s alcohol content may be significantly above the amount required to be legally drunk. Also the effects of alcohol are likely to last for a significantly longer time than the time the driver is on the phone.

The authors remark that the fact that cellular phone calls tend to be brief and infrequent accounts for the lack of dramatic increase in the number of accidents at a time when the use of cellular phones increased rapidly. In addition there are some benefits of cellular phones, for example, in reporting an emergency.

The authors also say that newspaper reporters wanted them to give their opinion on regulation of the use of cellular phones in driving which the authors did not feel was their field of expertise.

This is a great article from which to get some additional insight into what goes on in carrying out a study, especially a study that receives media attention.

DISCUSSION QUESTIONS:

1. Do you think the authors should be surprised at the media’s interpretation of their statement in the NEJM article that compared the risk of using a cellular phone while driving to that of have a blood level of alcohol corresponding to being legally drunk? Why do you think the authors made the comparison in their NEJM article?
2. Writing about an earlier study carried out in 1978, the authors say: “This survey of 498 individuals found that the overall frequency of traffic violations was marginally lower among the mobile telephone subscribers than among members of the general public (11% vs. 12%).” Why do you think the authors were suspicious of the results of this survey?
3. Writing about another study carried out in 1985, the authors say: This study of 305 individuals found a significantly lower collision rate in the year following the purchase of a cellular telephone (8.2% vs. 6.6%). They were “impressed” by this study but also “worried”. Why?