

Response to Rissel and Wen: 'The possible effect on frequency of cycling if mandatory bicycle helmet legislation was repealed in Sydney, Australia: a cross sectional survey'

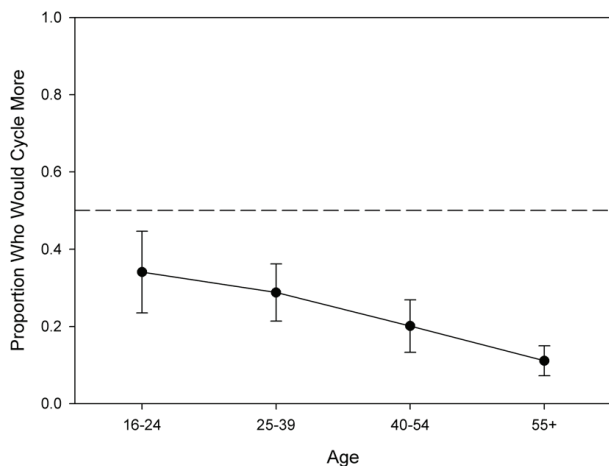
Jake Olivier, Tim Churches, Scott Walter, Andrew McIntosh and Raphael Grzebieta

Rissel and Wen's article boldly proclaims that repealing mandatory helmet legislation (MHL) would greatly increase cycling uptake.¹ However, closer examination of their results reveals that odds ratios are interpreted incorrectly several times and some findings were curiously omitted.

They state that people "aged 16-24 years...were significantly more likely to ride more if they did not have to wear a helmet". This is only found to be true when compared to those aged 55+ but is not shown to be the case compared to the broader adult population. If the intent is to state those aged 16-24 years are significantly more likely than not to cycle more, this is clearly not true as significantly more people responded to the contrary (0.341, 95%CI: 0.235-0.447). Also, significantly more people in the other age groups responded they would not ride more, with an apparent downward trend in proportion by age (see Figure 1).

Another interpretation that the authors give of their findings is that cyclists will cycle more if MHL is repealed compared with non-cyclists (AOR=1.93, 95%CI: 1.16-3.21). This is a result ambivalent to MHL as it implies the rates of uptake differ among cyclists and non-cyclists, but does not indicate the absolute impact of repealing MHL on cycling participation. Notably, the intention to cycle more if MHL is repealed was significantly lower amongst older age groups (only 11% in the 55+ group). As the article notes, not everyone who responded that they would be willing to cycling more without MHL would actually cycle more – the authors suggest 25-50% would. Thus, only 5-10%

Figure 1: Proportions of cyclists who responded they would ride more if mandatory helmet legislation is repealed by age group.



Error bars represent Wald confidence intervals computed from the proportions given by Rissel and Wen¹ in Table 2 and the number of responders in Table 1.

of 40-55 year olds and 3-6% of 55+ would cycle more without MHL. The authors do not discuss the implications of this result.

The article claims MHL support is inversely related to cycling frequency, i.e. support for MHL increases as cycling decreases. However, those who cycled on the day surveyed were combined with the next category. This group of responders (1.8%) is similar to commuting rates found in other surveys and overwhelmingly favours MHL (82.8%). The authors' conclusion is only valid if you omit (or in this case dilute) the people who likely cycle frequently and represent most daily bicycle trips.

The logic given that repealing MHL will not lead to significant increases in bicycle-related head injuries is flawed. Besides the obvious historical and biomechanical evidence presented elsewhere,^{2,3} the critical mass for the 'safety-in-numbers' effect is unknown and conditional on the interaction with motorised traffic. When riding along a dedicated bike path, safety might be better with fewer bike riders, because riders are less likely to overtake or crash into others. Wegman has argued this phenomenon does not exist and that the apparent benefits of countries with more cycling is confounded with the creation of safe cycling facilities and the expectations of motor vehicle operators interacting with cyclists.^{4,5} Secondly, comparing the Northern Territory with Sydney is specious as there are huge discrepancies in population density (926/km² in Darwin vs 2058/km²) and thus different road safety concerns.

The authors' concern with increasing cycling rates is commendable as cycling has many health and environmental benefits. However, the repeal of MHL as an impetus is not justified by their paper and has been challenged elsewhere.⁶

References

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