



DATA INSIGHTS

Commuting to work by bicycle reduces mental ill-health

Author: Dr Laurie Berrie and Professor Chris Dibben | l.berrie@ed.ac.uk

Date: 10 January 2024

DOI: <https://doi.org/10.1093/ije/dyad153>

It is well known that physical activity has a positive effect on mental health, but there is some debate over whether the domain in which individuals take part in physical activity is important. For example, does engaging in active travel to work have the same benefits as walking or cycling in your leisure time? Our research shows that cycling to work, when compared to all other modes of commute, reduces the likelihood of experiencing mental ill-health - specifically anxiety and depression.

WHAT WE DID

We linked the 2011 Scottish Census to prescribing records. This enabled us to look at those of working age who commuted to their place of work in two of Scotland's largest cities, Edinburgh and Glasgow.

We used distance from home to the nearest cycle path, rather than whether someone reported they cycled, as our main study measure. We did this to mimic an experiment, where people would be randomly asked to cycle or not. This randomisation ensures that on average the two groups of people are comparable, so other factors impacting mental health will be balanced between the two groups. Therefore, it can only be cycling affecting mental health if there is a difference between the two groups. This type of study is however difficult to organise in practice.

Distance to a cycle path mimics an experiment in our study because we find that the group of people living near a cycle path are comparable to those who are distant. However, those living nearer a cycle path are more likely, on average, to cycle and also have better mental health. Comparing groups of people who do not differ on average in factors affecting mental health, except cycling, allows us to be more confident that it is the cycling and not some other aspect of their life that is impacting their mental health.

We specifically used this method to estimate whether cycle commuting had a causal effect on prescriptions for antidepressants or anti-anxiety medication over a 5-year period. We created separate models for males and females.

WHAT WE FOUND

- We found that cycle commuting reduced the likelihood of receiving a prescription for antidepressants and anti-anxiety medication in the 5 years following the census.
- This effect was larger for females than for males.
- The effect was greater for antidepressant prescriptions than for anti-anxiety prescriptions.

WHY IT MATTERS

Promoting cycling has been part of numerous Scottish policy agendas including health, transport and climate change. This research supports increased investment in cycling and cycling infrastructure as there is evidence that this leads to increased cycle commute uptake.

As well as contributing to reduced mental ill-health, increased cycle commuting would reduce carbon emissions, congestion, and air and noise pollution. It would also increase physical activity levels and contribute to more liveable cities.

WHAT'S NEXT?

Using the same data, we are looking at the influence that on-road and segregated cycle paths have on cycle commute uptake. We will also look at population characteristics, such as age, sex, number of children in the household, and socioeconomic position of those who cycle commute. We also plan to look at the economic implications of an increase in cycle commute uptake.

For further details of this study, [read the full journal paper](#).

The Scottish Centre for Administrative Data Research (SCADR) analyses public sector data, using new data sources and novel methodologies to deliver cutting-edge applied research with real-world impact. We work with our partners to provide evidence-based insights, which inform policy and practice for public benefit.

Data Insights is produced by the Scottish Centre for Administrative Data Research
Website: www.scadr.ac.uk | Twitter: [@scadr_data](https://twitter.com/scadr_data) | Email: scadr@ed.ac.uk

The centre is a multi-institutional initiative hosted at the University of Edinburgh, which is a charitable body registered in Scotland (Registration number: SC005336).

