

ROAD TRAFFIC NOISE, QUALITY OF LIFE AND MENTAL HEALTH AMONG OLDER ADULTS

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Road traffic noise, quality of life and mental health among older adults¹

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INTRODUCTION

Traffic noise is a widespread feature of modern life, particularly in urban areas and cities. The World Health Organization (WHO) has classified traffic noise, including road, rail and air traffic, as the second most important environmental cause of ill-health in Western Europe. Noise exposure can cause a number of short- and long-term health problems, including sleep disturbance, cardiovascular disease, poorer work and school performance, hearing impairment, etc. While the evidence for harmful health effects of noise is growing, there is a lack of evidence for harmful effects on mental health and wellbeing. The objective of this study was to investigate whether exposure to road traffic noise is associated with quality of life and mental health in the older population.

DATA AND METHODS

We estimated exposure to road traffic noise during 2013 for residences in Dublin and Cork using the new common noise assessment methodology for the European Union (CNOSSOS-EU). This involved estimating noise exposure values for each residential address and linking these data to health, socio-demographic and behavioural information for 1,706 individuals aged 54 and over from the Irish Longitudinal Study on Ageing (TILDA) who lived in the two cities.

Using this combined dataset, we tested whether older people who were exposed to higher levels of road traffic noise had lower levels of mental health and wellbeing than those living in less noisy areas. In addition to quality of life, four

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indicators of mental health and wellbeing were examined: depression, anxiety, stress and worry. For each of these outcomes, we estimated statistical models that tested whether persons living in residences exposed to more noise reported poorer quality of life and mental health, even after taking account of other characteristics that might affect these outcomes such as age, sex, socioeconomic status, general health, etc.

RESULTS

We found a negative association between road traffic noise exposure and quality of life. Quality of life in TILDA is measured by asking individuals to answer 12 questions that capture how they feel about various aspects of their lives (e.g., 'I look forward to each day', 'I feel that life is full of opportunities'). The answers to each question are summed together to form a composite score, with higher values indicating higher quality of life. To put the size of the effect of noise on quality of life in context, the size of this effect was larger than the effect of moving from having completed only primary or no education to having completed secondary education. However, we found no association between road traffic noise and the other measures of mental health: depression, anxiety, stress or worry.

CONCLUSIONS

The world's urban population is set to double from 3.1 billion in 2014 to 6.4 billion in 2050. In this context, understanding the nature of the relationship between road traffic noise and public health outcomes such as mental health and wellbeing is important for those involved in urban planning, environmental regulation, etc. This research focused on whether older adults whose residences were exposed to more road traffic noise had lower mental health and wellbeing than those living in less noisy areas. While there was no statistically significant relationship between road traffic noise and depression, anxiety, worry or stress, we found evidence of a negative association with quality of life. However, a larger sample (encompassing urban areas outside Dublin and Cork) is required in order to fully explore this relationship in the older population.

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