RESEARCH BRIEF - JULY 2024

Neighbourhoods and Depression

Air pollution and neighbourhood status can influence how the built environment impacts depression.

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What is the problem

Depression is a common mental health disorder in adults aged 65 years and over, significantly impacting their quality of life and contributing to physical decline and cognitive impairment.

Older adults, due to decreased mobility and physical health, often spend more time in their local neighbourhoods, relying heavily on local services and amenities. Therefore, creating age-friendly neighbourhoods is a promising strategy to reduce depression in this population.

Previous studies have explored the impact of neighbourhood features on depression in older adults, but often overlooked the moderating effects of urbanisation by-products such as air pollution and neighbourhood disadvantage.

Understanding these complex interrelationships is crucial for informing targeted and effective policy changes, aimed at reducing health disparities in mid-age and older-adults.

Glossary

Built environment

Refers to man-made structures and features that collectively make up neighbourhoods and cities.
These structures can include residential and commercial buildings, parks, trials and public transport.

Commercial land-use

Land that is being used for business purposes such as for shopping centers health/personal services, restaurants and other commercial activities.

Street intersection density

A measure of how many street corners, or junctions, there are within a neighbourhood. An area with high street density, means there are many places where streets cross over each other.

Traffic-related air pollution (TRAP)

Air pollution that is produced from the use of motorised vehicles. TRAP is measured as the annual average Nitrogen Dioxide (NO_2) concentration in the area.

Purpose of the study

To further the understanding of how neighbourhood environments can influence depression in older adults.

How is it different from past studies?

This study examines how both air pollution and neighbourhood socioeconomic status can moderate the relationship between neighbourhoods and depression. No study to date has investigated both moderators simultaneously.

How was it done

About the AusDiab Study

The Australian Diabetes, Obesity and Lifestyle Study (AusDiab) is a population-based study of Australian adults. Participants were mid-age and older adults with the average age of participants being 61 years old. To be included in the study, participants needed to:

- Be aged 25 years or older.
- Have lived at their homes for at least 6 months before testing.
- Live in an urban area with a population of 10,000 or more.

The participants underwent testing at three time points (known as waves), each five years apart. Initial testing/Wave 1 (1999/2000), Wave 2 (2004/2005) and Wave 3 (2011/2012). 4141 participants were involved in the study.

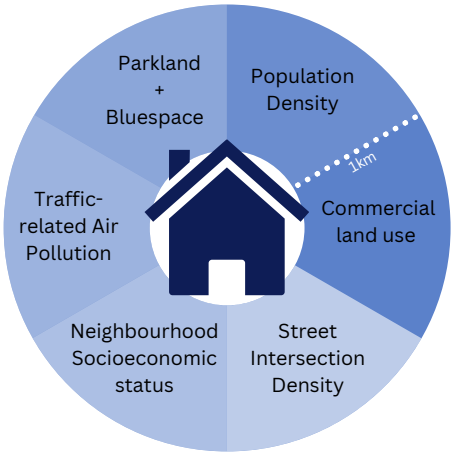
Only Wave 3 data was used in this study as this Wave included measurements of depressive symptoms, measured by the Centre for Epidemiological Studies Depression Scale, a 20-item survey that assesses the severity of depressive symptoms in adults, over 7 days.

For more details on the AusDiab Study visit: https://www.baker.edu.au/impact/ausdiab

Environmental measures

The study defined a neighbourhood as an area within 10-20 minute walking distance from a participants address, within a 1km radius.

For further information on measurements see full paper



Neighbourhood variables used in the study

Key findings

This study further strengthens the knowledge surrounding the relationship between the neighbourhood's physical environment and depressive symptoms in older adults.

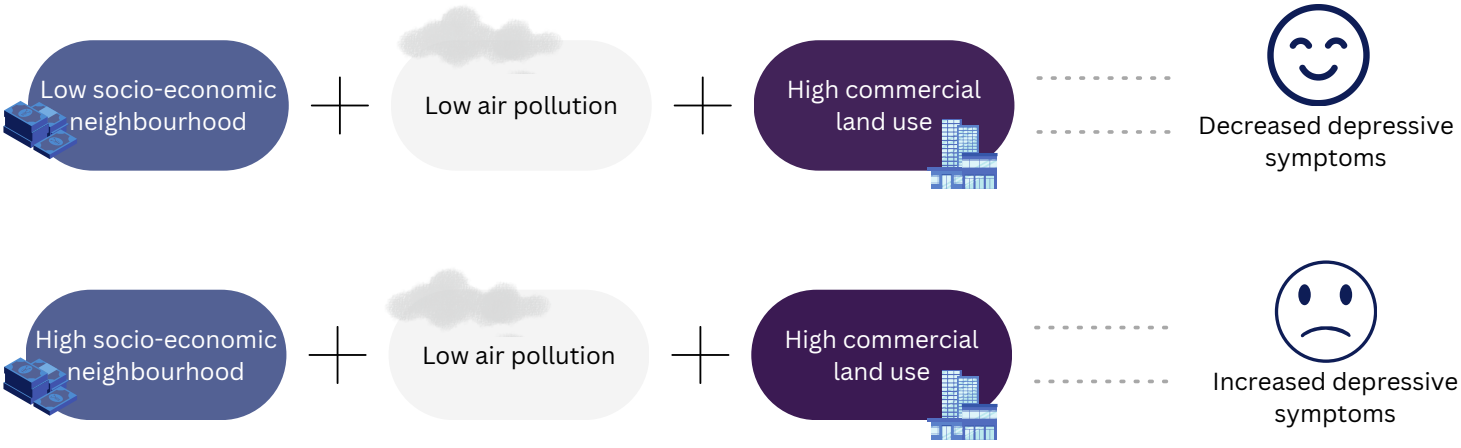
HIGHLIGHT

Superior street intersection density was associated with a decrease in depressive symptoms whereas increased population density was associated with an increase in depressive symptoms.

It also shows how certain aspects of the neighbourhood-depression relationship can be moderated by air pollution and neighbourhood status.

HIGHLIGHT

- This study is the first to demonstrate that the relationship between commercial land use and depressive symptoms is moderated by neighbourhood status and air pollution
    - There is a significant difference in depressive symptoms associated with exposure to commercial land use in disadvantaged and advantaged areas with low levels of air pollution.
    - Interestingly, people who reside in disadvantaged areas can benefit from commercial locations and facilities if air pollution is low, whereas this is not the case for individuals who live in advantaged areas.



Why this matters

This study provides crucial insights for policymakers and urban planners on creating age-friendly cities that support older adults' mental health. It suggests optimising neighbourhood density and street layout to mitigate depression risk and highlights the features needed in neighbourhoods to support mental health.

Importantly, the study reveals that the amount of air pollution, and the socioeconomic status of an area influence the impact of commercial land use on depression. The significant differences in depressive symptoms associated with exposure to commercial land use in disadvantaged areas vs advantaged areas with low air pollution underscore the need for targeted public health interventions to help address these disparities.

This research brief is based on:
Soloveva, M.V., Akram, M., Barnett, A., Poudel, G., Shaw, J.E., Martino, E., Knibbs, L.D. and Cerin, E., 2024. *Associations of neighbourhood attributes with depression in mid-age and older adults: the moderating role of traffic-related air pollution and neighbourhood socioeconomic status***.** Cities & Health, pp.1-12.

The entire study is available at: https://doi.org/10.1080/23748834.2024.2356408

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The AusDiab study was approved by the Alfred Hospital Ethics Committee (ref. no 39/11) and conducted according to the guidelines of the Declaration of Helsinki. All participant provided written consent before taking part in the study. *

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