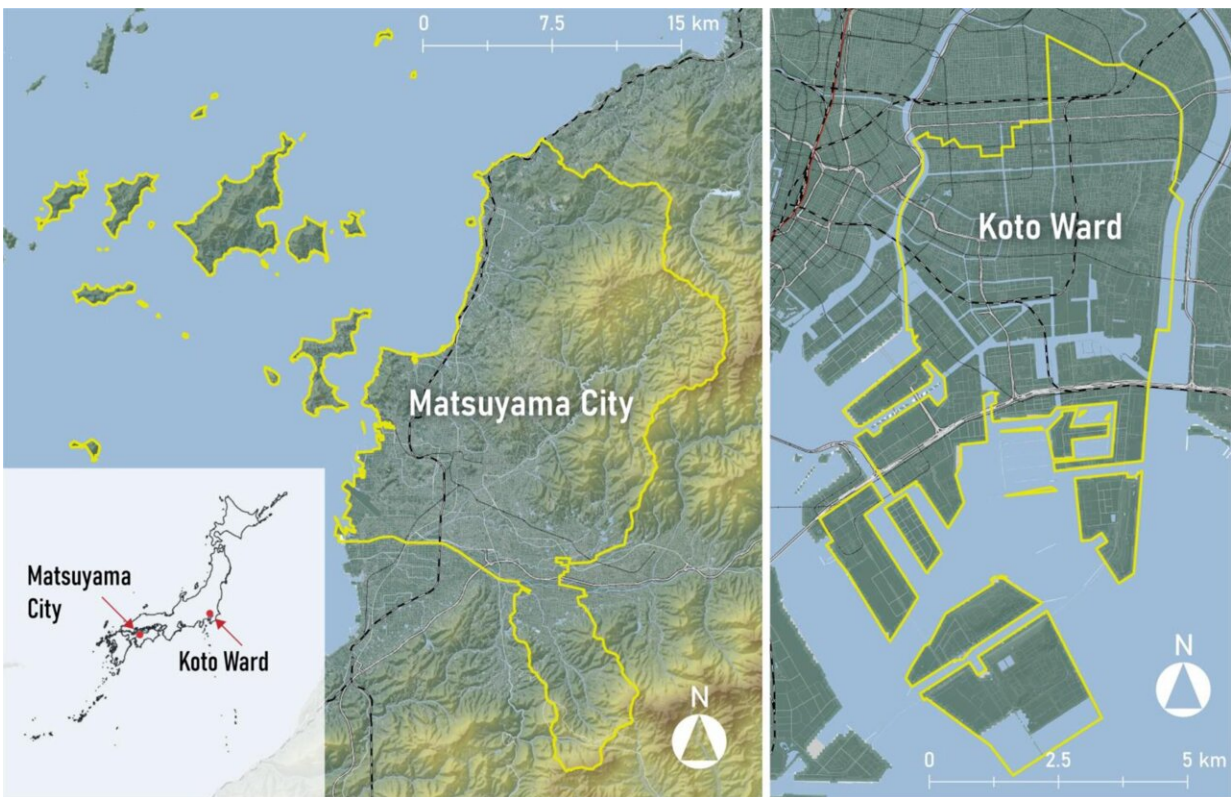


# Research in Japan suggests using built environment design to fight depression

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The locations of Koto Ward and Matsuyama City in Japan. Credit: *Landscape and Urban Planning* (2022). DOI: 10.1016/j.landurbplan.2022.104651

Depression is a chronic mental health condition that can impact one's physical health and well-being. Globally, approximately 280 million people of all ages experience depression, including 5% of all adults and

5.7% of older adults. As a result, reducing the global burden of depression has become an urgent matter. In this regard, identifying modifiable factors that can aid in the prevention and management of depressive symptoms is crucial.

The "built environment," which includes man-made spaces meant for daily life, work, or recreation, can be modified in terms of the design, structure, facilities, and services. The effect of the built environment on the health and well-being of inhabitants has been studied previously. However, [empirical studies](#) on this subject are lacking, especially for middle-aged adults.

To bridge this gap, a team of researchers led by Associate Professor Mohammad Javad Koohsari at the Japan Advanced Institute of Science and Technology (JAIST), who is also an adjunct researcher at Waseda University, examined how the built environment influences [depressive symptoms](#) among middle-aged adults. Explaining the novel nature of this study, Dr. Koohsari says "This study used both perceived and objective measures of the built environment and focused on the less-studied age group of middle-aged adults."

The team comprised Professor Kaori Ishii and Professor Koichiro Oka from Waseda University, Professor Tomoki Nakaya and Associate Professor Tomoya Hanibuchi from Tohoku University, Associate Professor Ai Shibata from the University of Tsukuba, Professor Akitomo Yasunaga from Bunka Gakuen University, Associate Professor Gavin R. McCormack from the University of Calgary (Canada), and Professor Yukari Nagai from JAIST.

The authors used the Centre for Epidemiological Studies Depression (CES-D) questionnaire to assess depressive symptoms among adults aged 40-64 years in two cities in Japan.

To study how this correlated with the built environment, they carried out objective assessments of population density, number of traffic intersections, and the availability of destinations. In addition, they also assessed people's perception of their environment, i.e., whether the people feel that public transport is accessible and there is adequate safety from crime. Their findings were published in the journal *Landscape and Urban Planning*.

The highlight of their findings is that objective attributes did not correlate with the odds of having depressive symptoms. However, the researchers found that perceived attributes, such as higher perceived walkability of the neighborhood, were related to lesser depressive symptoms among individuals.

Moreover, the researchers noted that gender tends to determine the perceived attributes that influence mental health. Among women, the factors influencing depressive symptoms included higher perceived access to transport and safety from traffic. Meanwhile, among men, higher safety from crime was related to a decrease in depressive symptoms and lower odds of mild depressive symptoms.

While explaining their findings, Dr. Koohsari remarks, "Built environment design may influence depressive symptoms through several behavioral and social pathways. Our findings provide empirical behavioral insights that improving perceptions of neighborhood walkability and, in particular, enhancing access to [public transport](#) and safety from crime and traffic are important for improving depressive symptoms in middle-aged men and women."

This study paves way for future research, where using comparable perceived and objective measures of the built [environment](#) can reveal whether design interventions to alleviate depressive symptoms should target residents' perceptions, places, or both. Furthermore, given the

difference in parameters that influence mental health among men and women, identifying other contextual reasons behind their perceptions might lead to more targeted solutions.

In a world where over 280 million people live with depression, a small step in the right direction in urban planning could translate into a giant leap in improving the mental health and well-being of people.

**More information:** Mohammad Javad Koohsari et al, Depression among middle-aged adults in Japan: The role of the built environment design, *Landscape and Urban Planning* (2022). [DOI: 10.1016/j.landurbplan.2022.104651](https://doi.org/10.1016/j.landurbplan.2022.104651)

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