

# Meta-analysis on urbanicity and depression research

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In 2018 the United Nations [predicted](#) that 68% of the world's population will live in urban areas by 2050, an increase from 55% today and a cause for concern among researchers who have identified multiple mental

health risk factors in urban living. A [2010 meta-analysis](#) in developed countries found that the prevalence of mood disorders was higher in urban areas, and [one from 2019](#) studied rates of depression in older adults in developed and developing countries.

Researchers from the Department of Psychology at the University of Pennsylvania conducted the first [meta-analysis](#) examining the global relationship, in developed and developing [countries](#), between urban living and the prevalence of depression across all ages. Their findings—that urbanicity is associated with higher rates of depression in developed but not developing countries—are [published](#) in the *Journal of Affective Disorders*.

First author Colin Xu, a former Ph.D. student in the lab of Penn psychology professor Robert DeRubeis, focused his dissertation on statistical modeling to predict outcomes in depression. He is now an assistant professor of psychology at the College of Idaho. DeRubeis, the paper's senior author, says he has been researching depression for more than 40 years but never investigated these kinds of demographic influences. Xu and DeRubeis talked to Penn Today about takeaways from their paper, a meta-analysis of 80 studies between 1980 and 2020.

## **Urbanicity is associated with higher rates of depression in developed countries**

The meta-analysis found "there was a significant effect of urbanicity on depression" in developed countries, such as the United States, the United Kingdom, Canada, Sweden, France, and Japan. Urban residence was associated with 1.37 times greater odds of depression than rural residence.

## **Urbanicity does not correlate with higher rates of**

## **depression in developing countries**

The authors found "no significant effect of urbanicity on depression" in developing countries, such as China, India, Taiwan, South Korea, and Nigeria. They sorted countries into developing or developed based on the UN's World Economic Situation and Prospects 2022 report categories.

Xu says one potential explanation is that lack of resources in both cities and [rural areas](#) means people with depression are not going to cities for treatment. DeRubeis also suggested that, because these are developing countries, urban features associated with depression in developed countries might not be as pronounced yet.

## **The reasons for the association between urbanicity and depression are unclear**

Seeing the results in developed countries, one might ask if living in a city make people more depressed, or are people with depression more likely to move to or stay in cities. These concepts are respectively called the breeder hypothesis and drift hypothesis.

Regarding the breeder hypothesis, "urban living is associated with social disparities, economic insecurity, pollution, and a lack of contact with nature, all of which can adversely affect mental health," the paper notes. But DeRubeis also notes that, if investigated, other features of urbanicity may be found to be associated with lower rates of depression.

As for the drift hypothesis, the paper says people with depression might move from rural areas to urban ones due to greater access to psychological treatment or reduced stigma. "I don't know of any research on that vis-à-vis depression," DeRubeis says, "so you've got an absence of evidence, which is different from the evidence of absence, and then

you have positive evidence on the other side."

"More research is needed to disentangle whether the drift or breeder effect—or both together—are driving the differences in depression prevalence between urban and rural areas," the paper states. Xu says the evidence is not strong enough to rule out one entirely but that it seems likely that both factors contribute to the observed effect.

## Effects vary by age for developed countries

The paper notes that the effect of urbanicity on depression in developed countries appears to be driven primarily by the [general population](#) demographic, whereas no significant relation was observed between urbanicity and depression among [older adults](#) or children/adolescents. In developing countries, there was no significant effect from urbanicity in any of these three age categories.

## Trends over time vary

"The earlier studies show that in developing countries living in rural areas has more depression than living in [urban areas](#), but more recent studies show the pattern that developed countries have always shown," Xu says.

The paper concludes, "If this finding is not spurious, it suggests that the risks of modern living that have contributed to the greater urban [depression](#) in developed countries may be gradually beginning to impact developing countries as these countries modernize."

**More information:** Colin Xu et al, Urbanicity and depression: A global meta-analysis, *Journal of Affective Disorders* (2023). [DOI: 10.1016/j.jad.2023.08.030](https://doi.org/10.1016/j.jad.2023.08.030)

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