



Planning ahead: the mental health value of natural environments

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Planning ahead: the mental health value of natural environments



Over the past decade, a growing number of studies have linked urban green space and aspects of biodiversity with emotional wellbeing. Although the existing body of epidemiological work has been very encouraging—collectively providing a strong argument that access to areas rich in vegetation, bodies of water, or both is important for mental health—much of the research relies heavily on cross-sectional designs. Thus, the translation and application of existing research to policy and planning decisions has been hampered by the scarcity of prospective evidence of natural environments as a causative factor in promoting mental health resilience. In *The Lancet Planetary Health*, Andrew Tomita and colleagues¹ strengthen this evidence by combining satellite-measurements of green space with depression outcomes in a large population in South Africa followed up over time.

Globally, urbanisation is advancing at a rapid pace, especially in low-income and middle-income countries. Decision makers, and the communities they represent, have much to consider when planning ahead for the arrival of an estimated 1.35 billion additional people to cities around the world within the next 15 years.² Choices made today will undoubtedly affect personal, public, and planetary health. There is therefore a tremendous need for policy and practice to be driven by the best available evidence.

Historically, planning decisions in the context of public health have been driven by research in the areas of safety, security, sanitation, ease of transport, and social factors such as affordable housing. With shifting global disease burdens from infectious causes toward an epidemic of non-communicable diseases—coincident with climate change and biodiversity losses—factors such as access to healthy, nutritious food and stable, sustainable, and healthy ecosystems are now included in the recent Vienna Declaration on Public Health.³ It is becoming increasingly clear that biodiverse, vegetation-rich green spaces are important assets for public health in the era of urbanisation.⁴

Although residential proximity and equitable access to natural environments have been linked to reduced risk of cardiometabolic disorders, their association with

emotional wellbeing seems particularly strong.⁵ Indeed, some researchers have argued that green space may be “equigenic”, in that equitable access can help to curb the consistency with which socioeconomic inequalities and disadvantages translates into mental health disorders such as depression.⁶ Evidence supports the notion that sensory exposure to aspects of the natural environment—or actually spending time in nature versus urban, built environments—improves cognitive restoration, decreases oxidative stress, and lowers markers of stress physiology and low-grade inflammation.^{7,8}

Although evidence supporting the importance of natural environments is growing more robust,⁹ large prospective studies remain sparse. Tomita and colleagues make an important contribution to the argument for incorporating nature into the urban environment. Taking advantage of the South African National Income Dynamics Study and mental health data collected via the Center for Epidemiologic Studies Depression Scale, they were able to determine whether vegetation-rich land surrounding the home—measured via the normalised difference vegetation index (NDVI)—affected incident depression over time. The authors found that, for middle-income South Africans, greenness surrounding the home was a predictor of lower incident depression.

Tomita and colleagues did not find a connection between green living environments and lowered risk of depression among South Africa’s low-income populations. The apparent lack of benefit of greenness in relation to depression among these disadvantaged individuals is, arguably, the most intriguing finding of the study. Such a finding, which the authors suggest could be due to the overwhelmingly larger negative issues associated with poverty, together with land dispossession and marginalisation, demands further research.

One of its primary goals of the UN’s 2030 Agenda for Sustainable Development is to “ensure healthy lives and promote well-being for all at all ages”.¹⁰ In the contemporary urban environment, public health research provides evidence-based guidance to limit exposure to toxins and to promote a built environment



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that fosters a healthy lifestyle.¹¹ Against the background of climate change, environmental degradation, and biodiversity loss, public health has become planetary health and vice versa, and virtually every branch of science and medicine must be allied in this new reality. This will help to strike a balance between socioeconomic development and sustainability.

As urbanisation proceeds at its rapid pace, the temptation is strong to simply translate the existing research into the notion that more green is better. But to what extent does increasing the amount of green space contribute to gentrification and marginalisation of the groups it was intended to benefit?¹² More information is needed about land use than vegetation indexes currently provide, such as details on biodiversity.

Addressing inequitable access to biodiversity and natural environments is a matter of "ecological justice".¹³ It will be very difficult to retrofit green space if neighbourhoods expand with steel, cement, and glass alone. Urban planners, public health professionals, multidisciplinary teams, and local communities must work together to plan ahead for mental health and quality of urban life in a changing world.

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