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A happy neighbourhood depends on interplay of local environmental features

A new German study suggests that residents' level of satisfaction with their urban neighbourhood can be predicted from their perceptions of multiple and co-occurring burdens, such as poor air quality, lack of green space, noise and low cleanliness.

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Living in cities is known to affect human health and research into the quality of urban environment and its effects on communities provides an important evidence-base for policy and planning. Research has tended to focus on individual environmental resources, such as green space, or burdens, such as air pollution. However, in order to understand the complexities of urban living, more comprehensive research approaches are needed that combine the influence of various city features on human wellbeing and quality of life.

The study aimed to provide a more integrated analysis of the relationships and interplay between urban environmental stressors and lack of resources, and how they affect self-reported levels of physical and mental health, as well as health-related behaviours, such as exercise and smoking.

Conducted in Berlin, the researchers first categorised blocks of streets as 'high' or 'low' burden, depending on three objectively measured factors. High-burden areas had traffic noise levels above 65 dB (the threshold considered acceptable in Europe), PM_{10} or NO_2 above EU air quality limits, and less than 0.1m^2 of public green space per resident within a 500m radius. Low-burden blocks had noise levels no greater than 50dB, air pollution within EU limits, and more than 6m^2 of public green space per resident within a 500m radius. From this, four high-burden blocks and four low-burden blocks in close proximity (approx 600 to 700m apart) were selected and compared.

Two thousand surveys were distributed to the eight street blocks and 428 were completed, with a balanced response from low- and high-burden blocks. The surveys assessed the residents' perceived quality of six environmental factors: provision of green space, vegetation, traffic-related noise, air quality, noise caused by people's actions and behaviour, and cleanliness. It also assessed their satisfaction with the neighbourhood, health behaviour, general physical health and psychological symptoms (depression and anxiety). Some socio-economic influences, such as gender, education and employment, were also accounted for.

The results revealed some differences between residents in low- and high-burden blocks on how they perceived environmental factors. Residents from high-burden blocks reported more traffic noise and less satisfaction with their neighbourhood. They also reported a higher level of unhealthy behaviour, but did not claim to have poorer general physical health or more psychological symptoms than residents from low-burden blocks.

Gender and education did not appear to influence the responses. Employment status did appear to have some effect on health behaviour in some cases; employed participants in high-burden blocks reported more unhealthy behaviour than those in low-burden blocks.

The study also analysed the interplay of the environmental factors. From this, it concluded that neighbourhood dissatisfaction could be predicted by the additional effect of several environmental burdens, whereas more general self-reported health is predicted mainly by perceived air quality.

The research supports the view that the interaction of multiple stressors should be considered in sustainable urban development. It suggests that the method used could be a promising way to define priorities for urban development programmes and could be transferred to other cities.