

The importance of the built environment to children's well-being: what do we know?

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There is growing consensus that the built environment plays a significant role in the well-being of children. Where you live makes a difference: evidence from Washington in the United States, for example, found that children living in deprived neighbourhoods were significantly more likely to be obese than those living in more affluent neighbourhoods, even when neighbourhood-level socioeconomic status was taken into account. Most of the research to date has been carried out in the US, Australia and Europe and, therefore, this essay will deal primarily with the challenges facing these childhood populations. In these contexts, concern for children's well-being has shifted away from communicable diseases to issues of broader well-being such as whether children are gaining the skills, competencies and experiences they need to lead a successful and happy life. There are questions about how relevant or applicable the findings are for many parts of the developing world, where child mortality rates are still high and children's lifestyles contrast starkly with their western peers. However, there is growing awareness in China, Japan and India of many of the most prevalent threats faced by western countries, including childhood obesity, teenage depression and anxiety.

Children's use of space has changed in the last few decades – the space they inhabit is shrinking, as they spend more time indoors and being ferried to destinations by car. This stems from a wider risk-aversion in society: fears about crime, traffic and 'stranger danger', as well as increasing availability of home entertainment. Older children travel further afield, and boys tend to be given more freedom to roam than girls.

The built environment of the home and outdoor space immediately surrounding it is therefore of central importance to children's well-being because of their prolonged exposure to it (at least sixteen hours per day). It also influences their health in adulthood: evidence from England and Scotland suggests that poor housing conditions, such as crowding, lack of

a private tapped water source and poor ventilation, in childhood is significantly associated with higher mortality in adulthood, in some cases even after controlling for socioeconomic status.

THE HOME

Lack of space in the home has been linked to a wide range of impacts, including poor social interaction, low educational achievement and cognitive development, behaviour and socio-emotional problems and poor respiratory health. In Hong Kong's dense urban environment, for example, personal space appears to be important in influencing children's academic performance, affording them the space to study. In the UK context, evidence about the health impacts of crowding on children's health and development have been influential in shaping policies such as the Mayor's London Housing Strategy.

Housing quality is also important to children's well-being, being associated with socio-emotional and mental health, cognitive development and respiratory health. Increased noise levels in the home from, for example, street traffic, neighbours or air traffic, seem to be particularly problematic for children, having implications for their physical and mental health, and their behaviour. A study of 1,048 German children found that exposure to road traffic noise at home was significantly associated with higher blood pressure. Insufficient daylight has been found to be related to depressive symptoms, and strong evidence supports a link between children's asthma/poor respiratory health and poor air quality, presence of dampness and mould and inability to keep the house warm, as well as between exposure to lead paint and neurological damage in young children, cognitive impairments in adolescence and problems with impulsivity.

There are also more pragmatic aspects of the physical design of housing that can create health risks for children: stairs and steps (associated with falls); windows and balconies (entrapment and falling);

pools and ponds (drowning or near drowning); and design/location of cookers, fires, radiators and other heat sources (burns and scolds). In England, the Housing Health and Safety Rating System includes health hazards for children, and is now being used by local authorities in the regulation and maintenance of new homes to ensure they provide safe environments for children.

Housing type also appears to be relevant for children's well-being. In Austria, children living in high-density flats are more likely to suffer mental health problems than their counterparts in high-density row housing. This may be because flats, especially in high-rise blocks, fail to provide adequate play opportunities, or because they are linked to depression in women, which has implications for children where these women are mothers. Context and culture is, however, very important here: high-rise living is the norm in many countries, such as Israel and Hong Kong, and very different expectations of what is high and low density exist: ten dwelling units per hectare is considered low density in the Netherlands, and 100 units per hectare high density, compared to ten to 20 dwelling units per hectare for low density and 290 per hectare for high density in Israel.

THE NEIGHBOURHOOD

Interest in 'child-friendly communities' has grown recently, mainly because of recognition of the importance for children of being outdoors, for unsupervised play and physical activity. Pressure has come from the need to combat rising obesity, which is also linked to mental health.

Child-friendly communities provide safety, through traffic calming devices, such as 'home zones', and opportunities for play, through incorporation of natural features, public art and parks. A Dutch survey of 448 children in 10 neighbourhoods found that a considerable proportion of the difference in walking and cycling activity between neighbourhoods could be explained by built environment characteristics such as frequency of pavements, pedestrian crossings, frequency of cycle tracks and the number of recreation facilities. Street layouts are also important in encouraging active travel: a study of schoolchildren in Norfolk, England, found that children were more likely to walk to school if they had a high density of roads in their neighbourhood. The quality of streets is also important, with a study in Ontario, Canada, finding that presence of street trees were significantly associated with students walking or cycling to school. Safety – or rather the perception of safety – and the

presence of multiple land uses and facilities are also important factors in encouraging physical activity in children.

There are more mixed findings for urban density. One study of Nanjing, China, found that lower residential densities were associated with more active travel, while a US-based study found the opposite. A review of thirteen studies from the US, Australia, Canada, Iceland and Europe, comparing the physical activity levels of rural and urban children, found little evidence of any difference, but some evidence that suburban and 'small town' children were the most active.

GREENERY AND PARKS

The presence of greenery in the built environment plays a key role in children's well-being, whether experienced in the immediate residential environment, in play settings or even by viewing it through windows. Children's contact with greenery and trees in the built environment has been linked to a range of physical, mental, developmental and emotional benefits, including reduced aggression, alleviation of stress, stimulation of creative play and social interaction and speedier recovery from operations. Children with attention deficit disorder, for example, function better after activities in green settings or in green play areas.

Urban parks provide many opportunities for children and young people: free play, exploration of nature, physical activity, improvement of motor and coordination skills, and interaction with other children. Proximity and accessibility of green open spaces to residential areas is positively associated with increased overall levels of physical activity across age groups. The National Institute for Clinical Excellence, which provides guidelines, recommendations and advice on health care and public health to England and Wales, now recommends the incorporation of green spaces in urban development to encourage physical activity.

CONCLUSIONS

Looking across all the research to date, evidence suggests that to best support children's well-being the urban built environment should have the following characteristics:

- Homes that have sufficient space and good arrangement of space to provide well for privacy;
- Buildings with adequate noise and heat insulation, while allowing sufficient ventilation and daylight;
- Housing that faces the street and includes small

transitional spaces between front doors and footways;

- Residential areas that have connected street layouts, incorporating trees and greenery, with features that reduce the speed of cars;
- Mixed land uses with plenty of local facilities and parks; and
- Play areas that use natural features in an imaginative way.

However, children also need to be allowed more opportunities to roam free and play outside without interference from adults, a behaviour that can be facilitated by good neighbourhood design. Children whose lives are too controlled may not have the chance to learn some key life skills that are best acquired through self-directed experiences, and may find it increasingly difficult to cope as they grow up. A recent UNICEF review found that countries where children enjoy comparatively high levels of everyday freedom prior to adolescence showed the highest levels of well-being and best outcomes for family and peer relationships. The lives of UK children may now be so constrained that when as adolescents they eventually gain a degree of freedom, they struggle to cope with the responsibility.

It could be argued that governments should be more proactive in providing and shaping the built environment to promote children's well-being. Alternatively, policymakers could ensure regulatory controls are more stringent. Some call, for example, for the reintroduction of minimum space standards for housing. These policies are, however, a relatively blunt instrument, and may have a detrimental effect on housing development at a time of housing shortage. Health providers have started to take the built environment seriously. For example, in the UK, the National Institute for Health and Clinical Excellence (NICE – the independent body responsible for national guidelines on health promotion) recommends the incorporation of green spaces within cities as a way of improving health.

More research is needed in order to develop our understanding of the mechanisms by which the built environment affects children's well-being. But carrying out research in this field is extremely challenging: it is difficult to conduct trials and longitudinal research, which limits the possibility of uncovering causal effects and much research, though informative, cannot be applied to practice. However, there seems to be consensus that the built environment makes a difference. With enough knowledge there is the potential to actively promote

the mental health and well-being of children by providing built environments that support their development, help them reach their potential, teach them creativity and problem-solving skills, encourage them to be active and fit, enable them to have good relationships and strong social networks – ultimately laying the foundations for a happy, successful life.

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