

Redesigning the urban environment to promote physical activity in Southern India

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Type 2 diabetes has become the most common metabolic disorder. Its prevalence is growing most rapidly among people in the developing world, primarily due to the rapid demographic and epidemiological changes in these regions. According to IDF, India currently leads the world with an estimated 41 million people with diabetes; this figure is predicted to increase to 66 million by 2025. The diabetes epidemic is more pronounced in urban areas in India, where rates of diabetes are roughly double those in rural areas. The authors report on an initiative to redesign urban environments in India, promoting physical activity and effectively reducing rates of obesity-related conditions, including diabetes.

A 2005 population-based study found that in the city of Chennai in Southern India, the prevalence of diabetes is higher among people who engage in light-grade physical activity (17.0%),

compared to those with either moderate- (9.7%) or heavy-grade physical activities (5.6%).¹ Indeed, the single strongest driver of the diabetes epidemic is a marked decrease in levels of physical

activity, particularly in urban areas. However, awareness remains low: only 12% of people living in Chennai were aware that decreased physical activity puts people at risk for developing diabetes.² The promotion of physical activity in the community is therefore a key step towards controlling the epidemic of obesity-driven diabetes.

Pleasant surroundings help people to stay fit, healthy and happy.

Reconstructing the urban environment

Recent research shows a clear link between health (both mental and physical), physical activity and the 'constructed environment' – roads, buildings, parks, and other structures that physically define a community. Pleasant surroundings reduce stress



and can encourage outdoor activities such as walking, cycling and jogging, which help people to stay fit, healthy and happy.

Promoting activity

Studies around the world have demonstrated that diabetes is preventable through lifestyle modification, mainly through increased physical activity. It is essential that physical activity be made a part of our lifestyle outside the home – at school, in the workplace – and at home, as a part of daily family activities.

In several developed countries, these issues are now being explored in earnest and in some areas a concerted effort is being made to encourage physical activity through a series of measures such as reintroducing stairways in buildings

and pavements on roads. Constructing and promoting paths for walking and cycling, restricting motorized traffic in designated areas, and building open play areas for children are examples of government actions to encourage physical activity.

Redesigning the urban environment requires multi-sectorial collaboration.

Redesigning an obesogenic world

In sharp contrast, in developing countries, including India, urban environments in particular are highly 'obesogenic' – they effectively hamper physical activity and promote obesity-related ill-health. In schools, for example, playgrounds are often sacrificed to build classrooms or computer stations.

Government actions to encourage physical activity include building paths and play areas.

Achieving higher levels of physical activity among children requires a revival of physical education in schools; the promotion of sports and games is of the utmost importance. This in turn requires sufficient parks, playgrounds, gyms and sports stadiums. Redesigning the constructed environment in urban settings to promote physical activity requires multi-sectorial collaboration between urban planners, architects and the departments of health, transport, sports, and youth affairs of local, regional and national governments.

The Chennai experience

A successful initiative in Chennai demon-

strated that community-based intervention programmes are not only feasible but are welcomed by the community.

In 1996, the Chennai Urban Population Study (CUPS) compared the populations of two residential areas representing middle- and low-income groups. The prevalence of diabetes was significantly higher in the middle-income group (12.4%) compared to the low-income group (6.5%).³ The results of the study indicated that with increasing affluence, which was invariably associated with decreased physical activity, there was a marked rise in the prevalence of diabetes.

After the CUPS results were published in 2001, the residents of the middle-income neighbourhood, Asiad Colony, were motivated by the researchers to increase their physical activity. The people themselves raised money to build a park, which is maintained through a modest annual contribution. The park, with bushes, trees, fountains and a play area for children, was completed in 2002.

The project was widely reported in the local media, sparking wide public interest. Several more parks were developed in Chennai as a result, entirely through the efforts of community members.

The local government subsequently undertook the construction or renovation of several parks in the city; there are now over 245 in Chennai. Similar activities have been started in other regions. This example of the potential of community empowerment was showcased as a model for developing countries in the WHO

publication *Preventing chronic disease – a vital investment*.⁴

Encouraging results

According to a recent survey, the construction of the park in Asiad Colony gave rise to a 300% increase in the number of people who exercised in this community.⁵ The findings of further studies suggest that this is already having an impact on the prevention of diabetes and obesity in the district. Given the role of obesity and sedentary lifestyles in cancers and other chronic conditions, it is not unreasonable to deduce that if this model were replicated, it might lead to the prevention not just of diabetes, but of a number of other non-communicable diseases.

Local solutions – long-term benefits

Building on the success of this initiative, a huge-scale community-based diabetes prevention programme is underway in Chennai involving over a million people.⁶ The 'Prevention, Awareness, Counselling and Evaluation' (PACE) project is supported by the Chennai Willingdon Corporate Foundation, a non-profit charitable organization, and involves large-scale public awareness programmes, cost-effective screening for diabetes, and community-based diabetes prevention activities, including physical exercise and yoga.

An obesity-driven diabetes epidemic is currently threatening the health of millions of people in developing countries like India. Local solutions are urgently required, with community participation and government backing, to effectively tackle the emerging threat to health that is posed by non-communicable diseases.

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