

Sustainable Urbanization and Its Impact on Health and Well-Being in Growing Cities

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ABSTRACT

Cities are known to be engines of economic growth and social change, but they are also known to be hot spots of environmental degradation, public health issues, housing problems, transportation problems and natural resources depletion. As a reaction to these urban challenges, a concept of sustainable urbanization has emerged, where the three pillars of sustainability – environment, social equity and economy – are integrated. This review paper explores the current literature regarding sustainable urbanization, its role in health and wellbeing in emerging cities. It synthesises evidences from scientific publications, international publications, and governmental reports to discuss the connections between sustainable urban planning, green infrastructure, air quality, accessibility to healthcare, mobility and quality of life. The review highlights the beneficial impact of sustainable urban development on improved health around the built environment and on physical, mental and social health of the urban population. It further pinpoints certain challenges, gaps in research and policy implications, offering a holistic view of the strategies needed to create healthy cities, inclusive, resilient to develop a sustainable urban future.

Keywords: Sustainable Urbanization; Health and Well-Being; Healthy Cities; Urban Sustainability

INTRODUCTION

One of the most typical traits of the twenty first century is urbanization, which affects both the natural and social and cultural context of people's lives. The world is observing an alarming world population growth, a booming industrialization, economic development and mass migration from rural to urban areas that is causing cities to grow at an unprecedented rate. Cities are increasing quickly and are progressively hyperactive centers of economy, technology, education, health care and cultural exchange. Despite this, the unplanned and fast urbanization has created a set of intricate problems such as environmental degradation, social inequality, public health issues and over-exploitation

of natural resources. The growing developments emphasize the need for sustainable growth to benefit human health and wellbeing while safeguarding nature for future generations—especially in cities.

When analysing sustainable urbanization from an interdisciplinary perspective, the scope of sustainable urbanization goes beyond urban planning and environmental policy to create a substantial cultural and ethical discourse. The city is experienced and not only a spatial object, but a space of human experience, environment and culture within the context of environmental humanities and ecocriticism. Sustainable urbanization aims to achieve a balance between economic growth, social justice, and environmental responsibility, guiding planning and governance practices to ensure a healthy, equitable, and sustainable future. It promotes the development of inclusive, resilient and healthy cities based on the principles of equitable access to decent housing, clean water and sanitation, health services, education, sustainable mobility and jobs, green public spaces, etc., which contributes to improving human health and ecological sustainability.

Concept of Sustainable Urbanization

Sustainable urbanization is defined as an integrated planning, expansion and management of cities that takes into account the economic and social development of cities while also integrating conservational concerns. It is a concept that is larger than just development in cities for economic development; it is a concept of creating cities that lead to a good quality of life and lower environmental degradation. Sustainable urbanization creates effective infrastructure, equitable access to public facilities, environmental governance, resilient societies that satisfy the needs today without compromising the needs of tomorrow. This way, sustainability becomes a developmental goal and gets guidance for the life in the cities of today.

Meaning of Sustainable Urbanization

Climate Change, ecofriendly degradation, urban poverty and health disparities are key concerns that have been given much attention in both the scholarly and plan communities, resulting in a substantial rise in interest in the topic of sustainable urbanization. Sustainable cities include efficient land use, environmentally-friendly infrastructure, renewable energy resources, effective waste management systems, affordable housing, sustainable public conveyance and the preservation of natural ecosystems. In addition to motivating the economy, these measures contribute to the improvement of social health, mental health, social inclusion and environmental sustainability. As a literary and cultural vision, sustainable cities represent a shared desire for cities that support human progress while living in balance with nature.

The Sustainable Development Goals (SDGs) and Urban Sustainability

The concept of inclusive, safe, resilient and sustainable cities is at the heart of the United Nations Sustainable Development Goals (SDGs), especially SDG 11 Sustainable Cities and Human settlements. This international agenda acknowledges that urban sustainability is essential to the realization of other development objectives, and to the enhancement of the quality of human life. The importance of the interdependence between sustainable urban development, healthier communities and social well-being is recognised increasingly by governments, urban planners, policymakers and public health professionals. Good urban planning can promote physical activity, mitigate environmental hazards, expand access to health care, and increase resilience to climate change and natural disasters. The concept of sustainable cities is also relevant to the literary and cultural images of cities as places of resilience, inclusion and ecological responsibility.

Urbanization and Public Health

The process of urbanization has had a deep impact on the health and well-being of cities' residents, in ways that affect their environments, their ability to access health care, and their social interactions. Urban development has created more opportunities for education, employment, health and technological progress, but it has also increased environmental and social problems which have a direct impact on public health. The urbanization-health link is thus one of opportunity and risk. The opposing poles are a crucial part of developing cities that are economically productive, environmentally sustainable and socially just.

Positive Aspects of Urbanization on Health

The urbanization has brought some positive impacts to public health with the access to health services, schools, jobs, modern facilities and sanitation. In general, the medical facilities, emergency services, diagnostic technologies and public infrastructure are superior in urban areas compared to rural areas. Moreover, improved economic opportunities can lead to better income, nutrition, health care, and general living standards. All these come together to foster better health and healthy living and lead to better physical and social outcomes.

Negative Impact of Urbanization on Health

However, the rapid and unplanned urban expansion has also ushered in major health-related problems. Population density, poor housing conditions, the urbanization of transport, air and water pollution, noise pollution, poor waste management, and the scarcity of green areas have become the hallmark of many growing cities. Stressful environments and situations are associated with higher rates of respiratory disorders, cardiovascular disease, obesity, diabetes, mental health conditions, infectious diseases, and stress-related diseases. Furthermore, the acceleration of urbanization can also lead

to greater disparate access to health services, including the poor, who already live in informal settlements and urban slums.

Environmental Sustainability and Health

Environmental sustainability is also a core component of sustainable urbanization, in the sense that sustainable cities are basic with the environment. Physical, psychological and social health can all influence public health, leading to a healthier milieu in which to live and reducing the exposure to environmental hazards.

Clean Environment and Public Health

In societies rapidly urbanising, good health outcomes can only be realised in a healthy and sustainable environment. Healthy urban living is based on fresh air and safe drinking water, good sanitation systems, waste management, and design of green infrastructure. But the air pollution has heightened during the era of fast mechanization, growth of vehicle population and extensive use of fossil fuels and has become one of the most severe ecological issues faced by modern cities. Exposure to polluted air over time has been associated with respiratory diseases, chronic obstructive lung disease (COPD), cardiovascular diseases, lung cancer and death. So, the aspects of environmental sustainability and public health have to be regarded as interdependent components of urban development policies.

Waste Management and Disease Prevention

One of the critical components in the control of communicable diseases and environmental health protection is waste management. Pollution of water resources and improper disposal of solid wastes pose a threat to the residents of urban areas to acquire diseases such as cholera, typhoid, hepatitis and diarrhoeal poisons. This is significantly reduced by recycling, wastewater treatment, scientific disposal of waste and use of globally friendly technologies that form the basis of sustainable waste management. These measures not only help to protect environmental health but can also contribute to the creation of safe and healthy societies for long-term environmental health and development.

Importance of Urban Green Spaces

The natural areas foster physical activity, improve air quality, control urban temperatures, lower psychological stress and promote social interaction in communities. Many studies have shown that the access to green spaces helps to reduce anxiety and depression, obesity, cardiovascular diseases, as well as emotional resilience and life satisfaction. However, in an ecocritical context, green spaces represent the coexistence of nature and urban life in harmony, highlighting the necessity to maintain the ecological landscape in the urban context.

Social Well-Being and Inclusive Urban Development

Sustainable urbanization is not only about protecting the environment but also developing inclusive, equitable and cohesive societies. Social well-being is influenced when all citizens have access to basic services that are fairly distributed, active involvement in the community, social justice, and equal opportunities. Inclusive urban development supports social cohesion by minimizing inequalities and creating conditions for people from different socio-economic backgrounds to be able to engage in civic life. “Dignity”, “belonging” and “quality of life” are increasingly coming to the fore in contemporary urban discourse that primarily focuses on human centred development, and a sustainable city is seen as a space that fosters the experience of dignity, belonging and quality of life.

Social Inclusion and Equal Access to Services

One of the key goals of sustainable urbanisation is to achieve a fair distribution of urbanisation benefits across society. A healthy and sustainable city is the city that aims at ensuring equality in access to affordable housing, quality health care, education, public transport, employment opportunities and other public services regardless of income, gender, age or social status. Inclusive urban planning works on the principle of structural inequalities, providing opportunities for the inclusion of marginal groups in and access to urban development. This balanced and equitable development contributes to social justice and enhances the resilience and sustainability of cities.

Community Participation and Quality of Life

The engagement of the community is one of the main pillars of sustainable city development, because meaningful participation of the citizens helps to strengthen the governance and improve their well-being. Local communities' participation in planning and decision-making process enhances transparency, accountability and ensures development actions are in tune with local communities' needs and aspirations. RGT fosters social trust, civic responsibility and the effectiveness of urban policies. These combine for improved mental health, life satisfaction, community bonds and the quality of urban life.

Concept of Smart Cities and Sustainable Development

The emergence of smart cities has been driven by the radical change in the way cities are planned, governed and managed by technology innovations. Smart city projects combine cutting-edge digital technologies and sustainable development principles into a unified approach to enhance the efficiency of cities, including environmental performance and public service delivery. Smart cities aim to improve urban living conditions and provide more resilient and healthy environments for their citizens, using intelligent systems in the fields of infrastructure, transportation, energy and city governance to solve the problems brought by the process of rapid urbanization.

Technological innovations are the engine of sustainable urbanization as they enable more efficient and responsive urbanization management. Smart city projects use Artificial Intelligence (AI), Geographic Information Systems (GIS), the Internet of Things (IoT), big data analytics and digital communication technologies for the optimization of public services and the use of resources. Intelligent transportation systems contribute to lower traffic congestion and vehicular emissions, and smart energy grids to energy efficiency and increased utilization of renewable energy. Moreover, digital health platforms, tele-medicine, and health information systems have improved access to health care services, bolstered disease monitoring efforts, and bolstered emergency response systems. All these innovations help create more sustainable, resilient and citizen-centric cities.

Challenges to Sustainable Urbanization

However, sustainable development still faces a lot of economic, institutional, conservational, and socio-political hurdles, especially in developing countries, which severely limit its potential for monetary development, environmental protection and social progress. Sustainability is becoming more difficult due to the fast rate of urbanization, which can put a strain on the organization, public services, and usual resources.

Rapid Urban Population Growth

The tremendous urbanization of the world is still a great problem, particularly in developing nations, although efforts towards sustainable urban development have advanced significantly. Rapid urbanization in many cities strains existing infrastructure and vital public services, creating a strain on housing, transport, sanitation, health care and jobs. This growth of informal settlements, poor housing, traffic jams, environmental pollution, weak sanitation and climate change risk result in the low sustainability and climate resilience of urban systems. These are all problems that point to the need for proactive urban planning that can integrate with the needs of population growth without compromising the environment and social concerns.

Governance and Policy Challenges

Sustainable urbanization depends on the role of good governance and implementation of sound policy, but a number of institutional barriers still remain. Poor coordination of sustainable development efforts due to the challenges of limited financial resources, weak governance mechanisms, poor policy implementation, and lack of coordinated urban planning. The effects of climate change on the planet continue to grow, with the rise in temperature, flooding, drought, heatwaves and other extreme weather events having a disproportionate impact on vulnerable urban populations in the world, exacerbating these governance challenges. Increasing institutional capacity, and ensuring integrated governance, are therefore still vital building blocks for resilient and sustainable cities.

Need for Integrated Urban Planning

Sustainable urbanization requires a collaborative, multi-disciplinary strategy and engagement of government, private entities and civil society, healthcare institutions, urban planners and local communities. The sustainable planning of cities require effective policy implementation, sustainable investments in infrastructure, environmental protection and inclusive governance to build resilient and equitable cities.

REVIEW OF LITERATURE

The current literature highlights the interdependency of sustainable urbanization with public health, environmental resilience and social well-being. In recent times, studies by international organizations and academics alike have repeatedly highlighted the importance of sustainable urban planning beyond its physical infrastructure to include issues of environmental justice, equitable access to public services, and improved quality of human life. Cities can be considered dynamic spaces, from the perspective of environmental humanities and interdisciplinary urban studies, where ecological sustainability, social inclusion and human well-being are connected.

WHO and UN-Habitat (2020) highlighted the need to mainstream the consideration of health in urban and territorial planning. Their publication created a complete matrix to define the link between the built environment, environmental quality, disease prevention, housing, transportation and public health in cities. The report clearly showed the impact of planning for health on reducing exposure to environmental pollution, promoting active lifestyles, increasing access to green spaces and improving resilience to future public health threats. It also underscored the importance of embedding health in all aspects of urban planning and the positive impact that equitable urban planning had on community health outcomes. The study called for increased cooperation between urban planners, planners and policy makers, and healthcare professionals to realize sustainable and inclusive urban growth.

Tonne et al. (2021) explored the complex pathways linking sustainable urban development with human health and well-being through an interdisciplinary approach. The researchers integrated evidence from environmental science, urban planning, transportation and governance, and found that sustainable urban development lowers environmental risks, encourages active mobility, enhances mental health and social equity. The study highlighted the importance of taking a multi-faceted approach to urban planning that addresses environmental sustainability, public health promotion, and equitable access to urban services. It also suggested that the governments should cooperate more with each other, with urban planners, environmental experts and public health professionals, in order to achieve long-term sustainable development goals.

The **World Health Organization (2021)** studied the association between urbanization and population health by looking at its Urban Health Programme. The report measured the impact of housing, transportation, sanitation, environmental quality and accessibility of healthcare on urban health outcomes. It noted that the unplanned urbanization made people more vulnerable to pollution and overcrowding and to communicable and non-communicable diseases. Sustainable urban planning, on the other hand, ensured access to clean environments, quality health services and safe public spaces, thus promoting physical and mental health benefits. The report recommended that health must be at the core of urban policy and planning, and called for a multi-sectoral approach to develop healthier, more inclusive and environmentally sustainable cities.

To explore the role of urban planning in enhancing health and wellbeing in fast-growing cities, **UN-Habitat (2022)** examined this issue in depth. Urban design was found to play a key role in shaping environmental quality, mobility, disease prevention and access to critical public services in a way that is inequitable. The results showed that cities that adopted integrated planning methods had better air quality, healthier living and social inclusion, and community resilience. Also, sustainable neighbourhood planning was identified as a driver of safer transportation systems, more green space and urban resilience. The report found that public health must continue to be a central concern of urban development policies, and suggested to incorporate public health more widely across urban planning and governance.

The **World Health Organization (WHO) (2023)** has undertaken the systematic review of urban governance and public health, in which barriers, facilitators and indicators related to participatory governance in cities were analysed. The review revealed that active citizen engagement, multi-sectoral cooperation and governance were key to improving health outcomes in cities and decreasing social inequalities. Cities with higher governance levels had better environmental management, better access to health services and better public health outcomes. The report emphasized participatory governance as one of the key elements of achieving sustainable urbanization, and recommended the use of measurable governance indicators and enhanced intergovernmental, community and health system collaboration.

The **Organisation for Economic Co-operation and Development (OECD) (2023)** examined the link between sustainable urban development and citizens' well-being in the OECD member countries. The report found that investments in sustainable urban infrastructure led to benefits for public health, life satisfaction, and to mitigating environmental risks when relying on indicators of environmental quality, housing affordability, mobility, healthcare accessibility, and resilience. The improvement of public transportation and cleaner urban surroundings promoted healthier lifestyle and decreased the diseases related to pollution. The report found that investment in sustainable urban development would have significant economic, environmental and social returns, and that health impact assessments should be integrated into the planning process of cities to create inclusive and resilient cities.

We have undertaken a comprehensive scoping review on the linkage between urban form, transport systems, environmental exposure, and public health, as described by **Dyer et al. (2024)**. Based on the findings of the key international studies, the review concluded that physical activity, environmental pollution and mental health were strongly associated with compact neighbourhoods with walkable urban environments, efficient public transport and accessible green spaces. The authors also highlighted the need for standardized urban health indicators to assess the sustainability policies and reiterated the fact that evidence-based urban planning is still vital for the development of more healthy, equitable and environmental friendly cities across the globe.

The **United Nations (2024)** assessed the world's progress towards SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable. The report focused on four aspects: urban infrastructure, environmental sustainability, disaster resilience, healthcare accessibility, and social inclusion, in both developed and developing countries. It showed that such investments in sustainable infrastructure had significant impacts in lowering levels of environmental pollution, increasing resilience to climate-related risks, and enhancing public health results. In addition, quality of life and social well-being of citizens was greatly improved by equitable housing, transportation and healthcare access.

FINDINGS AND CONCLUSION

Efficient public transportation, green infrastructure, affordable housing, an environment-friendly management of resources and integrated urban governance have been shown to positively affect the physical, mental and social health of the city. The results underscore the need to build sustainable cities and the importance of sustainable urban development as a human-centred approach which can lead to healthier and more inclusive communities.

Access to parks, urban green spaces, walkable neighborhood's and clean environmental conditions further has been shown in the literature to promote physical activity, decrease psychological stress and reduce the incidence of chronic diseases. Furthermore, urban planning that incorporates health improves health services access, supports social inclusion and increases the resilience of communities to face environmental hazards, including climate change. Together, these factors can foster an ecology and environment that are healthy for people and the planet in urban spaces.

In contrast, the reviewed literature consistently shows that unplanned urban development, lack of infrastructure, environmental pollution, overcrowding, poor sanitation and limited access to basic public services have a negative impact on the health of urban populations and increase social inequalities, especially for vulnerable and marginalized groups. These results highlight the need for integrated urban planning approaches, which not only focus on economic development, but also on environmental protection, social equity, and public health.

Another important finding from the literature is the increasing role of the smart city concept, participatory governance and evidence-based policymaking in the process of sustainable urban development. Collaborative governance, technological innovation, and integrated planning are always discussed as key elements to the development of inclusive, resilient, and environmentally sustainable cities, in reports published by the Organisation for Economic co-operation and Development (OECD), the World Health Organization (WHO), and the United Nations (UN) among others.

Sustainable urbanization can also be seen through the prism of the transformation of the relationship between human society and the surrounding environment from an interdisciplinary point of view, especially in the context of environmental humanities and ecocritical discourse. In recent years, cities are seen, in the context of contemporary scholarship, as not only places of economic growth, but also cultural and ecological environments where various interests of environmental responsibility, social justice and human well-being overlap.

Overall, the reviewed literature confirms the position of sustainable urbanization as a key element to realize economic growth, environmental protection, social improvement as well as better wellbeing and quality of life for the urban dwellers. In spite of the proliferation of research from the international community, however, empirical mark on rapidly urbanizing Asian cities is still lacking. The lack of research identified here highlights the need for more localised studies to better understand the issues and opportunities for supportable urban development in these areas, and to examine alternative more effective policies and planning.

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