

# The Urban Health Themes and Urban Factors Associated with Health: A Brief Review

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## ABSTRACT

The current situation is of a population shift from rural to urban areas and is the acceleration of urban growth. In this perspective, comprehending how urbanization has affected human health is critical. Hence, the aim of a synthesized review is the current understanding of urban health themes and urban factors associated with health. The most common topics of concern that emerge from the urban health literature can be summarized in three principal themes: social environment, physical environment, and provision of health and social services. Additionally, the results from our review aim to serve as a springboard for a thorough investigation of urban factors associated with health and their causes to improve predictions of the global health burden, influence health system planning and policy, and direct urban design.

## KEYWORDS:

physical environment, social environment, social services, urban health, urbanicity

## INTRODUCTION

Over half of the world's population lives in cities, and by the middle of the century, that number is projected to increase to 70%<sup>1</sup>. Urban areas would experience the majority of the population increase between 2000 and 2030, making up 60.4% of the world's population (4.9 billion versus 8.1 billion people), increasing from 48.3% currently (2.8 billion versus 6.0 billion in 2000)<sup>2,3</sup>. These "cities", which contain a mix of residential, commercial, and employment environments, are a distinctive

aspect of contemporary civilization. The number of people in cities is increasing, and this urbanization trend is expected to last for the rest of the twenty-first century. In this situation, it is critical to comprehend how urbanization has affected human health.

Cities are dynamic in both space and time in Bangkok, Thailand. Nowadays, the population of Bangkok has grown rapidly. There are dense communities, transportation cuts through the communities, more tall buildings, and traffic are congested (figure 1).



**Figure 1** Urban areas and the acceleration of urban growth in Bangkok, Thailand

Urbanization is associated with the population shift from rural to urban areas and the acceleration of urban growth. Cities were dangerous places to live because of violence, crime, and epidemics. Many developing cities today, nevertheless, suffer the same issues as poor neighborhoods in developed countries. Housing regulations, water protection, air quality safety, handwashing practices, indoor plumbing, and smokeless heating have lessened old urban ills in developed countries. Urban regions typically offer better employment, income, and access to health care than non-urban areas can provide, providing city dwellers in industrialized countries an “urban health advantage”. For instance, rural residents have a lower life expectancy, greater incidence of disease, injury, suicidal issues, and less convenient access to healthcare services<sup>4,5</sup>.

New infections increase unknowingly in urban areas, most often starting from vulnerable populations. They spread swiftly to impact the whole country and the world, because of continuous and significant immigration into and around urban areas. The rapidly rising traveler population makes it tricky to regulate the current

public health system, such as during the Corona Virus Disease 2019 (COVID-19). Starting from Wuhan, China, it quickly spread over the planet, causing serious economic damages and loss of health.

In urban society, humans live more isolated lifestyles than they are used to. It is associated with increases in the prevalence of non-communicable diseases (NCDs), such as obesity, high blood pressure, heart disease, cancer, etc. In urban areas with high population densities, accident-related injuries were identified, which is the primary reason for the years of health loss. Pollution issues, environmental diseases, including respiratory diseases, etc., and disaster management, require a more comprehensive level of management to be solved and actively promote advances in disease control, prevention, and protection.

Several significant synthesis studies looking at urban variable factors affect health, such as bullying<sup>6-8</sup>, sleep quality<sup>9-11</sup>, infection hazards<sup>12-15</sup>, violence<sup>16</sup>, stressors<sup>17,18</sup>, sex workers<sup>19-21</sup>, air pollution<sup>22-25</sup>, noise pollution<sup>26-28</sup>, flood issues<sup>29,30</sup>, food waste<sup>31</sup>, emergency system<sup>32</sup>, quality care<sup>33</sup>, safe and healthy housing<sup>34-37</sup>, cultural milieu<sup>38</sup>, and socioeconomic status<sup>39-42</sup> were reported.

Hence, the aim of a synthesized review is the current understanding of urban health themes and urban factors associated with health. The ultimate goal of this review is to serve as a springboard for a thorough investigation of urban factors associated with health and their causes to improve predictions of the global health burden, influence health system planning and policy, and direct urban design.

## REVIEW METHODOLOGY

We designed a new review methodology in three steps and the details are as follows:

**Step 1:** We outlined the conceptual approach for our review by using frameworks addressing key search terms, the terms include [("urbanization") AND ("urbanicity") AND ("urban health")].

**Step 2:** We used the main keywords [("Urban") AND ("Public Health") AND ("Urban Health")]. The search was refined by varying terms and combinations, using predefined specific keywords. Each of the used keywords covered a range of issues in the main topics of urban health, and the principal themes included [("social environment") OR ("physical environment") OR ("provision of health and social services")].

**Step 3:** We screened the literature review with a snowball approach in the electronic databases including Scopus, PubMed, ScienceDirect, Springer Link, and Google Scholar with full-text. As a restriction, the language filter was set to English.

Additionally, our approach differs from systematic reviews and offers a strong contribution to the status quo and a comprehensive view of field studies on urban health issues and urban determinants related to health<sup>43</sup>. Consequently, an independent assessment of the identified review literature is unnecessary in our review methodology.

Nevertheless, this approach has some limitations: I) the selection of keywords, (II) the missing double-check of excluded articles, and (III) opting for English-language articles only. However, overall, this approach allowed us to address the

prevailing research strands and broad lines of urban public health explicitly to identify existing research gaps at a more fundamental level.

## RESULTS

The literature search identified a brief review of current understanding of urban health themes and urban factors associated with health. The ultimate goal of this review is to serve as a springboard for a thorough investigation of urban factors associated with health and their causes to improve predictions of the global health burden, influence health system planning and policy, and direct urban design.

### I) Urbanization

Urbanization refers to a change in the size, density, and heterogeneity of cities<sup>44</sup>. Urbanization is frequently accompanied by elements such as population mobility, segregation, and industrialization<sup>45,46</sup>. For example, urbanization may involve the creation (or destruction) of building developments or neighborhoods, the creation (or elimination) of transportation routes, and the inflow and outflow of population, which alters racial and ethnic diversity<sup>44</sup>.

Urbanization creates distinctive characteristics in urban settings that require specialized research. Examples of how the characteristics of urbanization influence health can be considered. Poor people may burden the city's infrastructure, which also includes transportation, housing, food, water, sewage, jobs, and healthcare; if they migrate in large numbers in search of jobs and services (e.g., as an outcome of immigration brought on by food or employment shortages in non-urban or other urban areas)<sup>44</sup>.

### II) Urbanicity

Urbanicity refers to the impact of living in urban areas at a given time<sup>44</sup>. In the US, Andrulis coined the concept "urban health penalty" to represent the higher prevalence of health issues and risk factors in urban areas when comparing urban and suburban<sup>47</sup>.

For example, significant industrial pollution and the consequent increased prevalence of respiratory illnesses in some cities characterize urbanicity<sup>44</sup>.

Although these processes determine the observed prevalence, it is important to understand the specific risk factors and diseases in urban areas. In the long term, the study of urban health needs to understand the dynamic process of urban transformation and the way urbanization changes the parameters of urbanicity.

### III) Urban health

The definition of “urban” also varies widely among countries. Compounding these difficulties, definitions of urban have changed over time in different ways in different countries. Thus, what we may call urban in different settings may have included city centers, peri-urban fringe cities, and densely populated isolated regions<sup>44</sup>. Thus, according to urban health, the following

topics were among the most commonly examined in the literature on public health and medicine: population growth, population density, race and ethnicity, vulnerable populations, socioeconomic status/poverty, disaster threats, crime, substance abuse, access to healthcare, the environment, patterns of health and social, service networks, high levels and proximity of income inequality, and international differences. For example, providing access to clean drinking water and disposing of household waste are currently one of the largest issues in rapidly developing urban areas in developing countries<sup>48</sup>.

Thus, “**urban health**” research can be considered differently. Urban health thinking can be organized around characteristics unique to urban living. The most common topics of concern emerging from the urban health literature can be summarized in three principal themes: social environment, physical environment, and provision of health and social services<sup>44</sup> (figure 2).



**Figure 2** A summary infographic on urban factors associated with health

#### IV) Urban health themes and urban factors associated with health

A Memorandum of Understanding (MOU) between the World Health Organization (WHO) and the United Nations Human Settlements Program (UN-HABITAT) was signed on October 8, 2021, to enhance their mutual aims and objectives and promote urban health<sup>49</sup>. The MOU highlights collaboration on specific technical issues as they correspond to urban contexts including: urban planning and health, NCD and injury prevention, environmental health, emergency preparedness and response, health and migration, environmental management of vector-borne diseases, safe and healthy housing, and safer and healthier diets

It aims for integrated programming in fields, including advocacy, data collection, policy development, and research. The MOU seeks a stronger emphasis on urban health in WHO and UN-HABITAT in recent years. These are in recognition of the potential gains to be made through cooperation on global items on the agenda such as the “triple billion” targets of WHO’s Thirteenth General Program of Work 2019–2023, implementation of the New Urban Agenda and the realization of Sustainable Development Goals (SDG). Particularly, SDG 3 refers to ensuring healthy lives and promoting well-being for all at all ages, and SDG 11 also means making cities and human settlements inclusive, safe, resilient, and sustainable<sup>30,49</sup>.

Thus, implementation of the New Urban Agenda and the realization of SDG, in particular SDG 3 (“Good health and well-being”) and SDG 11 (“Make cities inclusive, safe, resilient and sustainable”).

Within each of these themes, concerns regarding urbanization (e.g., aging or diversification of the population) and urbanicity (i.e., socioeconomic status, crime as conditions of urban living) remain important distinctions. Thus, this synthesized investigation of urban health’s principal themes: social environment, physical environment, and provision of health and social services, also covers WHO and

UN-HABITAT contexts. Hence, a summary infographic of urban factors associated with health (figure 2 and table 1).

##### a) Social environment

The social environment refers to the properties of the “**urban community**” that affect individual behavior and urban variable factors in Table 1. Additionally, it covers urban planning and health, NCD and injury prevention, health and migration, and environmental management of vector-borne diseases.

Over the past century, many factors of the social environment have changed, and these possibly have differently impacted the well-being of urban populations. Other factors of the urban social environment might benefit health development<sup>50</sup>. In fact, it has been indicated that social support is related to cardiovascular disease mortality. Thus, according to future investigations, urban social networks lend a helping hand and may positively impact residents’ health<sup>51,52</sup>.

##### b) Physical environment

Relevant features of the physical environment important to “**urban areas**,” and urban variable factors are in Table 1. Additionally, they cover NCDs and injury prevention, environmental health, environmental management of vector-borne diseases, safe and healthy housing, and safer and healthier diets.

More subsequently, a significant amount of interest has arisen in how the built environment affects physical and mental health as well as how public space is designed. Investigating how much physical space affects both physical and mental wellness is important.

##### c) Provision of health and social services

The study of the urban context includes the provision of health and social services as a core issue. The impact of these services on well-being differs from (though commonly related to) the social or physical environment and urban variable factors in Table 1.

**Table 1** Urban health themes and factors associated with health

Urban health themes	Urban variable factors	Diseases	Citations
Social environment	Elderly	CVD NCDs Sleep quality Mental disorders	[53, 54] [10, 11, 55] [9, 56, 57] [56, 58]
	Infection hazards	COVID-19 HIV TB	[12] [14, 59, 60] [61-63]
	Sex worker	HIV	[19-21, 64, 65]
	Stressor	Mental health	[17, 18, 66]
	Violence	Mental health	[16, 67-69]
	Bullying	Mental health	[6-8, 70-73]
	Culture milieu	-	[38, 74, 75]
	Social norms	-	[76-79]
	Networks (migration)	Infection diseases	[80-82]
	Socioeconomic status		[39-42]
	Slum health	Mental health	[83-86]
Physical environment	Built environment	Asthma	[87, 88]
	Air pollution	Cancer CVD Mental health Respiratory tract infection Mortality from nervous diseases	[23, 89] [24, 90, 91] [92-94] [24, 25, 91, 95, 96] [96-99]
	Noise pollution	Diabetes type II CVD Mental health	[22, 100-102] [26-28, 103, 104] [105-107]
	Light pollution	Sleep quality Loss of naked-eye Mental health	[108, 109] [109] [109]
	Tobacco	Cancer Respiratory tract infection	[110-113] [114-116]
	Chemical issues	Cancer Respiratory tract infection	[117-119] [117-119]
	Hazardous waste	Respiratory tract infection	[120, 121]
	Landfill sites	-	[122-124]
	Transportation	Accident /Injuries	[125, 126]
	Water issues	Infectious hepatitis, cholera, bacillary dysentery, typhoid, paratyphoid, salmonellosis, colibacillosis, giardiasis, cryptosporidiosis, and amoebiasis	[127, 128]
	Food waste	Diarrheal	[31]
	Flood issues	Water-borne disease	[29, 30]
	Safe and healthy housing	-	[34-37, 129]
Provision of health and social services	Health insurance		[13, 15]
	Quality care		[30, 33]
	Emergency system		[32]
	Public service clinic		[44]
	Well-being		[30, 44]
	Public transportation routes		[30, 44]

NCDs include obesity, high blood pressure, heart disease, and cancer.

Abbreviations: CVD, cardiovascular disease; HIV, human immunodeficiency virus; NCDs, non-communicable diseases; TB, tuberculosis

## CONCLUSION

Urban health intellectual can be organized around characteristics unique to urban living. The most common topics of concern that emerge from the urban health literature can be summarized in three principal themes: social environment, physical environment, and provision of health and social services, including covering SDG 3 and SDG 11 for sustainable urban development.

Additionally, cross-sectional or longitudinal study research may provide insights into the key features of cities and the influence of urbanization on population health. Moreover, our review provides the key research gaps, including I) The lack of NCDs and injury prevention. The findings of a thorough literature assessment of disease monitoring systems include the following as major areas for research and implementation: increased cross-sector collaboration between public health and urban services, more use of cost-effective monitoring technologies such as mobile phones that can accelerate disease detection and control measures, and inventive research for new disease control instruments. II) Lack of environmental health prevention. A longitudinal study is needed to identify trends and variation factors. III) Lack of environmental management of vector-borne diseases. The authors suggest implementing policies and practices concentrating on the most vulnerable groups by enhancing disease surveillance and utilizing early warning systems. Significant knowledge gaps exist regarding the role of healthy persons, the impact of co-infections, and other environmental and social factors. IV) Lack of safe healthy housing. The integration of ecological and sustainable vector control methods, waste management and sanitation, and investigation are also highlighted by the authors as new fields of research.

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