



**DESIGNING FOR WELL-BEING: URBAN DESIGN AND  
THE CHANGING MEANING OF PUBLIC HEALTH**

**CANSU COŐKUN**

Graduate School  
Izmir University of Economics

Izmir

2022

# **DESIGNING FOR WELL-BEING: URBAN DESIGN AND THE CHANGING MEANING OF PUBLIC HEALTH**

**CANSU COŐKUN**

A Thesis Submitted to  
The Graduate *School* of Izmir University of Economics  
Master's Program in Architecture

Izmir

2022

# ABSTRACT

## DESIGNING FOR WELL-BEING: URBAN DESIGN AND THE CHANGING MEANING OF PUBLIC HEALTH

Coşkun, Cansu

Master's Program in Architecture

Advisor: Asst. Prof. Dr. Emre Gönlügür

August, 2022

This thesis deals with the relationship between urban design and public health and well-being. Urban design and the built environment are important determinants of physical and mental health, behaviors, emotional and social well-being at both the individual and social levels. The main claim of the thesis is that the definition of public health, which has been an important criterion in the design of cities, has expanded and transformed to include the concept of well-being, and that public health should be defined not only with reference to physical conditions but also in terms of psychological, environmental and social criteria. Accordingly, the thesis first summarizes how public health has been defined in history, and then proceeds to discuss three main points that are central to thinking about the design of cities from the perspective of well-being. These are walkability, access to nature and the composition of the urban form. The first point concerns how cities are experienced in more active ways through pedestrian mobility. The second point highlights the recreational and social aspects of interacting with nature and public green spaces for

mental and healing benefits. The last point discusses the morphological composition of cities as social public places. The thesis argues that a well-designed city that responds to public health concerns should also incorporate urban design principles that address physical, environmental and social aspects of well-being. The result obtained with the discussion is that urban design greatly affects physical health, mental, emotional and social well-being. The thesis concludes that city design is an important determinant that contributes to the well-being of the society in terms of promoting a healthier life with a holistic perspective.

Keywords: urban design, built environment, public health and well-being, pedestrian mobility, access to green areas, urban form.



# ÖZET

## REFAH İÇİN TASARIM: KENTSEL TASARIM VE HALK SAĞLIĞININ DEĞİŞEN ANLAMI

Coşkun, Cansu

Mimarlık Yüksek Lisans Programı

Tez Danışmanı: Dr. Öğr. Üyesi Emre Gönlügür

Ağustos, 2022

Bu tez, kentsel tasarım ile halk sağlığı ve refahı arasındaki ilişkiyi ele almaktadır. Kentsel tasarım ve yapılı çevre hem bireysel hem de toplumsal düzeyde fiziksel ve zihinsel sağlığın, davranışların, duygusal ve sosyal esenliğin önemli belirleyicileridir. Tezin temel iddiası, kentlerin tasarımında önemli bir kriter olan halk sağlığı tanımının, refah kavramını da içerecek şekilde genişlediği ve dönüştüğü, halk sağlığının sadece fiziksel koşullara referansla değil, psikolojik, çevresel ve sosyal kriterler açısından da tanımlanması gerektiğidir. Bu doğrultuda tez, öncelikle halk sağlığının tarihte nasıl tanımlandığını özetlemekte, ardından da kentlerin tasarımını refah perspektifinden düşünmenin merkezinde yer alan üç ana noktayı tartışmaya açmaktadır. Bunlar yürünebilirlik, doğaya erişim ve kentsel formun bileşimidir. İlk nokta, yaya hareketliliği yoluyla şehirlerin nasıl daha aktif bir şekilde deneyimlendiğiyle ilgilidir. İkinci nokta, zihinsel ve iyileştirici faydalar için doğa ve kamusal yeşil alanlarla etkileşimin rekreasyonel ve sosyal yönlerini vurgulamaktadır. Son nokta ise sosyal kamusal alanlar olarak kentlerin morfolojik yapısını

tartışmaktadır. Tez, halk sađlıđı endişelerine yanıt veren iyi tasarlanmış bir kentin, refahın fiziksel, çevresel ve sosyal yönlerini ele alan kentsel tasarım ilkelerini de içermesi gerektiđini savunmaktadır. Tartışma ile elde edilen sonuç, kentsel tasarımın fiziksel sađlıđı, zihinsel, duygusal ve sosyal refahı büyük ölçüde etkilediđidir. Tez, kent tasarımının bütüncül bir bakış açısıyla daha sađlıklı bir yaşamın teşvik edilmesi açısından toplumun refahına katkıda bulunan önemli bir belirleyici olduđu sonucuna varmaktadır.

Anahtar Kelimeler: kentsel tasarım, yapılı çevre, kamu sađlıđı ve refah, yaya hareketliliđi, yeşil alanlara erişim, kentsel form.



## ACKNOWLEDGEMENT

I would like to extend my sincere thanks to my advisor Asst. Prof. Dr. Emre Gnlgr for his patience and mentorship. He was with me at every stage of the thesis with his knowledge, opinion and support. I am also extremely grateful to him for shedding light on my way with his discipline, approach to architecture and broad perspective. In addition, I also thank the jury members Assoc. Prof. Dr. Aslı Ceylan ner and Assoc. Prof. Dr. Burkay Pasin for their very valuable contributions to my thesis.

Finally, I would like to thank my dear family for their love, encouragement and support throughout this process. This study, which is my dream, is the result of endless faith, love and encouragement.

## TABLE OF CONTENTS

ABSTRACT .....	iii
ÖZET .....	v
ACKNOWLEDGEMENT .....	vii
TABLE OF CONTENTS .....	ix
LIST OF FIGURES .....	xi
CHAPTER 1: INTRODUCTION .....	1
1.1.Problem Statement: .....	1
1.2. Significance of the Research .....	3
1.3.Research Questions .....	5
1.4.Methodology .....	5
1.5.Structure of the Thesis .....	7
CHAPTER 2: THE EMERGENCE OF MODERN PLANNING AND THE DISCOURSE ON PUBLIC HEALTH .....	10
2.1. Urban Life in the 19th Century .....	11
2.2. The Public Health Act of 1848.....	12
2.3. The Beginning of the Modern Urban Planning Movement .....	14
2.4. The Importance of Clean Air in the Late 19h Century .....	17
2.5. Beyond Hygiene and Sanitation: Public Health as Well-being .....	19
2.6. Conclusion .....	22
CHAPTER 3: THE RELATIONSHIP BETWEEN WALKABILITY AND WELL- BEING .....	23
3.1. Walkability in Cities .....	24
3.2. Pedestrian Mobility as Physical Activity .....	25
3.3. Well-being and Pedestrian Mobility .....	27
3.4. Encouraging of Local Activities .....	30
3.5. Walkable Mobility of Neighbourhoods .....	30
3.6. Environmental Benefits of Walkability .....	32
3.7. The 15- Minute City .....	34
3.8. Bicycle Cities of Copenhagen and Amsterdam .....	36
3.9. Conclusion .....	38



CHAPTER 4: THE WELL-BEING AND ACCESS TO PUBLIC GREEN SPACES .....	39
4.1. The Effect of Green Spaces on Physical Health .....	40
4.2. The Link between Public Green Spaces and Well-being.....	41
4.3. Green Networks and Urban Communities .....	45
4.4. Environmental Functions .....	47
4.5. Urban Agricultural Gardens and Therapy Gardens .....	49
4.6. Conclusion .....	51
5. CHAPTER 5: URBAN FORM AND WELL-BEING .....	52
5.1. Urban Form .....	52
5.2. City Squares .....	54
5.3. Neighbourhoods with Mixed Land Use .....	56
5.4. Local Connections that Provide Street Connectivity and Neighbourhood Design .....	59
5.5. Conclusion .....	62
CHAPTER 6: CONCLUSION.....	63
REFERENCES.....	66

## LIST OF FIGURES

Figure 1. Conceptual Map for Urban Design and Well-being .....	6
Figure 2. From Cholera Disease .....	13
Figure 3. Sanitary System in Streets .....	14
Figure 4. Garden City Model .....	15
Figure 5. Garden City Model .....	15
Figure 6. The Three Magnets Diagram for Garden City Model .....	17
Figure 7. Central Park in New York .....	18
Figure 8. Determinants of Public Health.....	20
Figure 9. Diagram for Well-being.....	20
Figure 10. Walkability Scheme in Urban Design .....	25
Figure 11. Pedestrian Mobility in City.....	29
Figure 12. Pedestrians in local areas and neighbourhoods .....	31
Figure 13. The 15 Minutes City Model .....	35
Figure 14. Active Mobility in Copenhagen and the Amsterdam .....	37
Figure 15. Public Green Spaces .....	40
Figure 16. Diagram of Green Spaces .....	42
Figure 17. Activities in Public Green Spaces .....	44
Figure 18. City Square .....	55
Figure 19. Diagram of Mixed Land Use .....	57
Figure 20. Neighbourhood Design .....	61

# CHAPTER 1: INTRODUCTION

## *1.1. Problem Statement*

The era of rapid urbanization and industrialization led people to migrate towards towns and cities. Public health became more important as growing cities brought about unhealthy living conditions. Every day, more and more people live in urban environments and they depend on many of the services that urban design offers or fails to offer. Today, the link between public health and urban design has become important both for people in the medical field, researchers, and for urban designers and planners. The link between urban design and public health and well-being is a growing field of study. In this context, it is very important to discuss the impact of urban design and planning on health and well-being for a more livable and sustainable urban life.

Throughout history, many diseases similar to the Covid-19 epidemic have emerged such as the cholera and tuberculosis epidemics in the 19th century. These contagious diseases had a direct impact on living standards and public health and their management, has become a necessary component of the design, planning and implementation processes of cities. Urban spaces, which create the living spaces of people, are the principal areas of increasing diseases and pollution. Covid-19 disease, for instance, a process that reveals the importance of public health and well-being, has severely disrupted daily life in cities. During Covid-19 pandemic, millions of people around the world had to maintain social distancing in their homes with quarantine and isolation. The idea of contagion of the epidemic pushed people away from public spaces and imprisoned them in their homes. This public health crisis has demonstrated rapid and effective transformations in the education, health, workplaces, social services, access to daily necessities and lifestyles cities provide to people around the world. While the implementation of social isolation measures affected physical health, it also impacted mental and social health, giving way to loneliness, feelings of depression and lack of communication. At the same time, the fact that people turn to open public spaces, green areas and nature to relax and get away from stress during the quarantine period also shows the need for green infrastructure. Contrary to all this, during the pandemic, people have had positive results in the reduction of air pollution

and noise pollution as a result of the decrease in the use of transportation vehicles. Davies, Cornes and Sherriff (2020) state that Covid-19 has reshaped daily travel routines, reduced car use and increased the number of pedestrians walking and cycling, thus increasing the availability of fresh air in cities. Likewise, measures that require people to self-isolate at home during lock-down periods clearly demonstrated the importance of open squares, parks and green spaces in daily life. These changes and developments in urban spaces again show that the relationship between the design of cities, urban lifestyles and public health needs to be further explored and in more detail. In their article “The Pandemic City,” Martínez and Short (2021, p.7) state that the Covid-19 pandemic has changed the city and has led society to rethink what constitutes the quality of life in cities. The impact of the Covid-19 pandemic on city life and lifestyle has led to a rethinking of public health in urban and spatial design. It is generally argued that the built environment has a great impact on people’s lifestyle and habits. In the nineteenth century, the fight against infectious diseases such as cholera and tuberculosis caused by the lack of attention to cleanliness and sanitation has been replaced by non-communicable chronic diseases such as heart disease, respiratory diseases, obesity, diabetes, and cancer due to lack of design and planning, since the 20th century. Such new threats to public health are largely rooted in sedentary lifestyles shaped by the design of cities. Gehl (2010, p.6) writes that,

*“Achieving the vision of lively, safe, sustainable and healthy cities has become a general and urgent desire”* (Gehl, 2010, p.6)

underlines the significance of healthy urban planning for public life. A lot of research has been done on the relationship between the urban environment and public health and well-being. In these studies, it is argued that urban design has a significant positive effect on shaping human health and well-being. Lack of sufficient green areas in the urban environment, noise and air pollution, transportation with the use of motor vehicles, lack of contact with nature, and insufficient physical activity and disconnection from social ties pose risks to human health and well-being. Along with the Covid-19 epidemic, urban design and planning methods once again show the importance of using pedestrians and bicycles, access to nature and green spaces, outdoor activities in public spaces, city squares, connecting with other citizens in neighbourhoods, meeting their daily needs within walking distance without using a

motor vehicle. Studies show that urban design has a strong positive effect on reducing the rate of diseases by enabling conditions that support healthier lifestyles. In their article “Promoting Health in the Urban Context,” Hancock and Duhl (1988, p.24) from WHO’s Healthy Cities Project define the healthy city as:

*“one that is continually creating and improving those physical and social environments and expanding those community resources which enable people to mutually support each other in performing all the functions of life and in developing to their maximum potential”* (Hancock and Duhl, 1988, p.24).

A well-planned and healthy city, can provide benefits in many ways, such as encouraging public to exercise and engage in physical activity, turn to nature, reducing the risk of traffic accidents, preventing exposure to pollution, to encourage social participation, and improving mental health.

## **1.2. Significance of the Research**

This thesis is about the impact of urban design on public health and well-being. It puts individual and social well-being at the center of urban planning with its perspective between urban design and public life. It explores how livable, healthy and sustainable cities should be designed, with a focus on community health and well-being. Urban design, which is accepted as an important tool in terms of raising the living standards of the society, is instrumental in achieving well-being. The thesis discusses the ways in which urban design can help improve and promote mental, physical, social health and overall quality of life. With the awareness that the well-being of individuals and societies is a priority, it examines urban design principles that can be integrated into policies about public health and well-being.

Today, public health is increasingly defined in connection with the design of urban environments and how cities can contribute to people’s overall quality of life by working to mitigate chronic physical and mental illnesses brought about by lifestyle choices and behavioral patterns. Human health has come to be defined in connection with happiness, a positive mindset and psychological well-being, which is defined by the Constitution of the World Health Organization (1948, p.1) as:

*“a state of complete physical, mental and social well-being”* (World Health Organization, 1948, p.1).

It is necessary to evaluate the well-being from a holistic perspective in physical, psychological, emotional, spiritual and social terms. It is important to recognize the benefits of sunlight, fresh air, bodily exercise, access to nature and availability of social contacts through urban design. Urban planning and public health take a common perspective aimed at improving human well-being. According to World Health Organization (2021, p.10), well-being is a state of being in good status that supports general development depending on social and environmental conditions. Well-being includes a multidimensional perspective that improves quality of life – having good physical and mental health, happiness, to enjoy life, minimum level of stress, positive social feelings, calm mind.

Given that well-designed cities may hold the potential to positively influence the overall health and well-being of their residents, it becomes important to examine how spatial designs at the urban scale can foster a society with better physical and emotional health and social well-being. Sanchez and Duhl (1999, p.10) argue that the definition of health should be evaluated from a social perspective, beyond a more restricted, medically conceived perspective merely involving diseases. Urban design and our built environment not only affect our physical health, but also our mental health. Many studies show that unhealthy lifestyles, physical diseases such as obesity, diabetes, asthma, heart diseases, and many psychological risks such as depression, social stress, schizophrenia or chronic anxiety are associated with the design of urban environments. Urban planning schemes that encourage people to move more, can provide solutions to diseases that affect health such as heart disease, some types of cancer, obesity, diabetes and asthma. Urban areas, buildings and landscapes shape thoughts, behaviours, individual and social lives by helping to form emotions and actions. The places where people live, work, play, learn and spend time affect both physical and mental capacities partly directly and partly indirectly, and later on, it can be accepted as a criterion in determining the self-development and lifestyle of the society. For this reason, urban design should develop solutions that positively affect human health in many ways and bring the human-natural environment-built environment trio closer together.

In the design process of cities, considering that a well-designed environment

contributes to the health of individuals, urban design and planning should also incorporate spatial design criteria that support well-being as a critical factor determining the quality of life for both individuals and communities. While there can be other elements of city design to promote well-being as a public health concern, the thesis focuses on physical, environmental and social aspects of well-being. These correspond to walkability, access to nature, and the composition of urban form. The first refers to how cities are experienced by individuals in more active ways, while the second refers to recreational ways of engaging with nature for therapeutic benefits, and the last refers to morphological composition of cities as social spaces. In this context, this thesis focuses on the links between the city and public health and discusses the effects of urban design on well-being and quality of life with a holistic and sustainable perspective.

### ***1.3. Research Questions:***

The main research questions of the thesis revolve around the design of livable and healthy cities:

- How do urban design and planning affect public health and well-being?
- What impact does walkability have on city design in terms of public health and well-being?
- How does availability of public green spaces contribute to the health and overall well-being of urban residents?
- What role does physical urban form play in addressing public health and well-being?

### ***1.4. Methodology:***

The main subject of the thesis is based on the urban context that directs the quality of life in physical and mental dimensions with a health-oriented approach. Focusing on the relationship between human and space, it investigates the effects of the design of the urban environment on both individual and social well-being and development. Based on the understanding that healthy cities will create healthy communities, it discusses the potential of urban design as a tool to solve the negative effects of urbanization. The study argues that cities should be examined as a whole with values that increase the quality of life of the environment and people. The thesis

argues that a well-designed city contributes to public health not only physically but in terms of social and psychological aspects as well. Urban design can be utilized as an important tool for solving public health and well-being problems today and in the future.

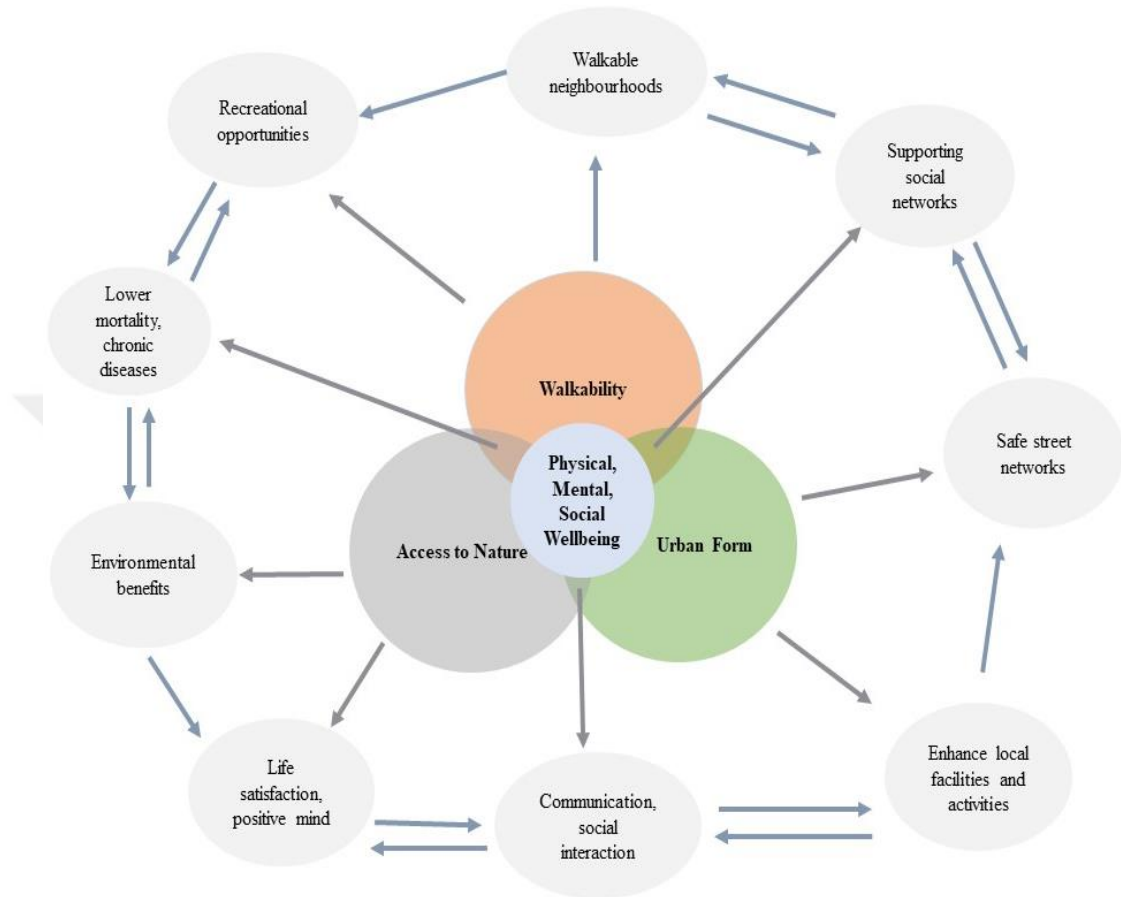


Figure 1. Conceptual Map for Urban Design and Well-being

Qualitative research method is used in the study process. According to the literature review, the relationship between the city and well-being is examined in terms of urban design and people's lifestyle, mood and health conditions (Figure1). On the one hand, the study brings together what research in the field of health has to say about the city and urban design, and on the other hand, it brings together two different disciplines from the perspective of urban studies that try to examine urban space in terms of health criteria. Within the scope of the study, first of all, the place of health and well-being in social life in cities from past to present is discussed. Then, throughout the study, the contributions of urban practices that promote health and well-being to living conditions, human health and city quality are examined. In order to better understand the phenomenon of well-being in cities, case studies from different places and studies, experiments and observations are also included. Finally, the results



of the connection between urban design and social well-being are evaluated.

### ***1.5. Structure of the Thesis***

The study discusses how urban design can contribute to public health and well-being under main four chapters: The Emergence of Modern Planning and the Discourse on Public Health, Walkability Practices in Cities, Associations of Green Space with The Well-being and the Influence of Urban Form in City Life. Each chapters includes topics, solutions and applied case studies.

Chapter 2 deals with the historical background of the perspective of public health in cities from the nineteenth century to the present. In the nineteenth century, rapid and unplanned urbanization, along with industrialization and migration, caused overcrowding in cities, poor housing, and this had negative effects on public health and environmental hygiene. Environmental pollution has caused communicable diseases and public health problems, revealing inadequate and poor quality living conditions. Unhealthy living conditions in cities make public health an important current issue that needs to be addressed. The chapter reviews the turning points in public debate that links the design of cities to growing health concerns. It looks at the origin of the historical background of public health in urban design, emphasizing the necessity of defining a holistic and sustainable concept of well-being that includes public health, according to the modern urban planning view with a community-based approach.

Chapter 3 emphasizes the link between on a human scale health and quality of life of active transport strategy, which promotes pedestrian mobility and cycling in the design of a healthy city. The chapter, explores and points how being a walkable city helps reduce the rate of heart, respiratory, cancer, high blood pressure and obesity disease and improve overall emotional health. A sedentary lifestyle puts the heart and muscle systems at risk, and further increases all causes of death. Places with mixed-use pedestrian mobility to that meet daily needs form the foundations of healthy areas and encourage active and social living spaces, with reduced need for motor vehicles, low carbon emissions and clean air. Thus, it can limit road accidents, create a safer environment, prevent chronic diseases, at the same time, by overcoming the feeling of loneliness and allowing communication with other citizens, it can contribute to mental and social well-being. It discusses safe and healthy ways to connect citizens to local areas in urban design and planning. In addition to solving many physical and mental

diseases with medical methods such as drugs, it is possible to offer a healthier, well-being and livable environment to the society when sustainable conditions are added to the physical texture of cities.

Chapter 4 discusses how public green spaces are one of the determinants of quality of life, improving the health and well-being of city dwellers, both at the individual and community level. Public green spaces are important places for urban life in terms of public health and environmental benefits by providing an escape to nature breathe in crowded urban life. Providing access to green space and nature during the routine daily habits of urban people improves physical health, mental health and well-being. Integrating green spaces into the pedestrian-oriented city creates walkable communities, while physical activity and exercise habits in open air and green spaces not only improve the functioning of the body, but also provide more happiness and mental relaxation to the citizens. Spending time in accessible public green spaces such as city squares, parks, gardens, playgrounds and being in touch with nature is good for physical and mental health, it helps to create a community by creating opportunities for social communication and sharing with other individuals. In addition to the benefits it provides for the benefit of society, when evaluated from the ecological dimension, it also positively affects environmental quality and sustainability by providing natural protection against global threats.

Chapter 5 reveals community-focused approaches to the design of urban squares, mixed-use spaces, and neighbourhoods that help build local connections. Urban squares are places that unite the society, enable it to gain unity and solidarity, and provide social and cultural sharing, giving the city a local identity. Urban squares reflect the lifestyle of the society by meeting physical, spiritual and social needs. The increase in urban services is important in terms of improving the quality of life. In this sense, from the point of view that the settlement style affects well-being and health, it is important that mixed-use lands, which is another component, can easily meet daily needs at the pedestrian scale, and provide access to social and public services, activities. In order to improve spatial, social and environmental continuity, the Compact City model is an important design approach that reduces distances and increases usage. Neighbourhoods are pedestrian-oriented local junction points that include city squares and mixed-use lands. Neighbourhood design is one of the determinants of the development of the urban and social structure by arranging the spatial pattern that determines the vitality, sociability, unity and security of a society.

Street networks, where priority is given to pedestrians and cyclists, increase community mobility and accessibility, and provide a balanced improvement in the physical, mental and social health of city locals.



## **CHAPTER 2: THE EMERGENCE OF MODERN PLANNING AND THE DISCOURSE ON PUBLIC HEALTH**

This chapter discusses the development of the discourse around public health in cities during the 19th century in connection with the emergence of modern planning ideals. It focuses on the health-related planning problems of the industrial city in the 19th century, the emerging discourse on public health, early examples of urban planning initiatives that directly address public health, 20<sup>th</sup>-century modernist planning ideals around health-related problems of the city, and the place of the concept of public health in today's cities beyond sanitation.

The industrialization of cities in the 19th century caused serious health hazards. Problems such as immigration, crowded neighbourhoods, poorly designed housing, inadequate sanitation in cities seriously affected the health and life of the people. Unhealthy living conditions, epidemics and deaths have provided an understanding of the importance of public health in city planning. The concepts of hygiene and sanitation came to the fore in this period.

The chapter first reviews the state of public health in the nineteenth-century industrial metropolis. It then turns to a report by Edward Chadwick questioning the link between poor living conditions in cities and health problems forms which the basis of the Public Health Movement (1848), taking into account public health research. It has become an important part of public health planning, which highlights the importance of sanitation through measures such as clean streets, clean air and water, improvement of housing conditions and sewer systems.

The second topic of discussion is the Garden City Model of British city planner Ebenezer Howard, who has a vision of creating a city in harmony with the physical environment and nature, and is a solution to industrialized cities by controlling the growth process of cities.

Another important planning proposal for public health is Frederick Law Olmsted and his Central Park, who had the idea to prevent tuberculosis at the beginning of the 20th century. Well-designed public green spaces in America are important to society and providing opportunities for clean air and recreation.

Finally, the chapter reviews the modernist planning approach, which reinforces the relationship between urban planning and public health. The modernist planning

approach offers an integrated holistic approach to clean air, natural daylight, open public green spaces, hygiene and improving poor living conditions at the maximum level. In today's planning, more emphasis is placed on physical, mental, spiritual, emotional, and social dimensions of well-being,. Finally, the chapter reviews the problems of rapid urbanization in urban planning and impact on public health and well-being with emergence of modern planning.

### ***2.1. Urban Life in the 19th Century***

The rise of the industrial metropolis in the nineteenth century defines an important moment for emerging discourses around managing and regulating public health. These discourses are related to the urban planning and they especially concerned issues around the management of epidemics and pandemics in dense urban centers. Industrialization benefited economic progress, however it started the sudden growth of towns and cities. Tugac (2020, p.267) states, during the historical process that followed, production in rural areas brought industrialization to cities and led to rapid urbanization.

The rural-urban migration created crowded cities and resulted in uncontrolled urban growth. The rapidly growing cities were divided according to social status and class differences. The increase in population density in urban centers has resulted in inadequate sanitation standards and poor-quality housing. Rapid urbanization was the cause for many problems in public health. Infectious diseases such as cholera and tuberculosis were a common occurrence in densely populated urban centers. The cholera epidemic was caused by polluted drinking water. The frequent tuberculosis epidemics, on the other hand, were the result of severe air pollution. As Campbell (2005, p.463) states:

*“tuberculosis was a disease closely associated with the rapid growth of industrialization and a poorly nourished urban working class who lived in insalubrious, overcrowded conditions”* (Campbell, 2005, p.463).

Population growth and migration from rural areas to urban centers following the Industrial Revolution have opened the way for poor-quality housing conditions, slums, air and drinking water pollution, and unhealthy living conditions. Unhealthy living conditions and inequalities between society have significantly increased levels

of poverty, sickness and death. Therefore, as Barton et al. (2015, p.20) state:

*“Public health rapidly became a – if not the – principal social and economic problem of the day”* (Barton et al., 2015, p.20).

The establishment of healthy living conditions in the city came to the fore as a main point of discussion in debates around public health.

## **2.2. The Public Health Act of 1848**

The idea that diseases were linked to poverty and unhealthy living conditions was central to the reform movement that was taking shape during the first half of the nineteenth century. In the first half of the nineteenth century, calls for reform that advocated the treatment of public health issues as an urbanization issue led to research in public health. British social reformer Edwin Chadwick was one of the important figures who led the calls for reform through research on improving and healing urban health in controlling epidemics in England through industrial urbanization. Chadwick was a key player in the creation of the Public Health Act. He prepared a report on the link between living conditions in cities and epidemics.

Chadwick believed that the disease was spread by bad air (Figure 2). He pointed out that unhealthy environmental conditions are more common in places where diseases are present. Chadwick's *Report on an Inquiry into the Sanitary Condition of the Labouring Population of Great Britain* (1842) pioneered public health and sanitary efforts to provide public health for all people. Barton (2016, p.47-48) states that it shows the link between the urban environment, hygienic requirements, crowded population and public health and furthermore, there are social class differences between those living in rural areas and those living in cities. In addition to this, Morley (2007, p.61) notes that the report, how modern conditions create a division of health among social groups.

As a result of the report, the Health of Towns Association (1844) was formed. In this way, the first research for public health was started and public health reforms were initiated. The calls for reform culminated in the Public Health Act of 1848, the very first law on public health to be passed in the United Kingdom with the intention of improving sanitation and living standards in towns and cities across England and the Wales.

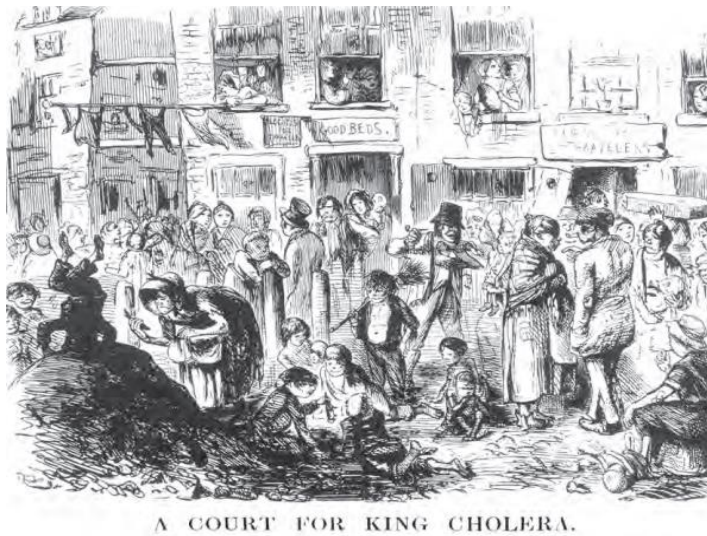


Figure 2. From Cholera Disease (Source: Barton, 2016, p.48)

The Public Health Act suggested that public health should be systematic, and solutions to the problems of urban life such as housing conditions, sewerage systems of the streets, clean water supply and environmental hygiene were the main issues that needed to be regulated together with the act. Municipalities were authorized for these interventions that responsive to health problems in cities and public health management was provided. The connection between public health and urban planning has an significant determinant part in increasing the quality of society life.

The Public Health Act proposed a strategy to improve living conditions and, balance the link between the built environment and public health by emphasizing housing conditions, water and sanitation. The main purpose of the act was to enhance public health by effectively improving the sanitation conditions of cities. Therefore, Public Health Act should be viewed as a very important step towards improving health in cities and making the connection between public health and urban form.

On the other side of the Atlantic, there were similar initiatives that argued for the provision of better public infrastructure to address public health concern. In the middle of the 19th century, as in many cities, the population in the city centers in the United States was very dense and sanitation conditions were under development. The toilets and sewers which caused by the population density created problems in the sewer system as they were located near water sources. There was a need for better and safer sewerage systems on the streets. George E. Waring who Commissioner of the

Department of Street Cleaning of the City of New York, implemented a better sewerage system in streets. Waring designed a system that separates the sanitary sewerage from the rain water runoff. This system was a new design that had not been implemented in the United States before. This drainage design method has helped reduce epidemics effectively.



Figure 3. Sanitary System in Streets (Source: managemen.com, 2018)

Waring had a major city-wide impact on the city by reforming recycling, street sweeping, and garbage separation and collection (Figure 3). His efforts to make urban areas cleaner have had positive effects in New York City and around the world. Nordenson (2016, p.123) states that his innovative and remedial actions help permanent sanitation in street cleaning and garbage collection efforts in New York City and are an exemplary model for many cities. His vision and work was an important foundation for improving sanitation through clean streets and waste collection systems in cities.

### ***2.3. The beginning of the modern urban planning movement***

The concept of the Garden City, which defines an important moment in the history of planning, constitutes an important starting point for a fundamental rethinking of how cities are designed in connection with public health concerns. The Garden City movement is an urban planning model proposed by Ebenezer Howard in 1898 (Figure 4).

Ebenezer Howard's *To-morrow, A Peaceful Path to Real Reform*, first published in 1898 and later in 1902, marked a turning point in the history of town



planning, particularly in England. This book was the origin of the Garden City idea, which aimed to design small settlements to manage the uncontrolled growth of the city through rural-urban migration. The Garden City Model was meant as a healing solution to worsening public health and less-than-ideal living conditions. The idea of Garden City, which was first implemented in England in 1903 with the Letchworth Garden City, is a holistic city planning model with nature that combines self-sufficient areas, agricultural areas, residential and industrial areas (Figure5).



Figure 4 and Figure 5. Garden City Model (Source: archdaily.com, 2021)

With the rapid urbanization and industrialization of the period, class divisions deepened. Inequalities caused by class divisions and living standards among society were increasing. Changes and inequalities in urban and rural life also affected the quality of housing. Howard focused on the urban and the rural design concepts as a whole in order to solve the people living in houses with unhealthy conditions and the health problems caused by these conditions. The Garden City Model, which tried to combine the benefits of urban and rural life to meet the needs of the industrial society, offered:

*“...a regional perspective with principles from ecology to improve well-being...”* Barton et al. (2015, p.39).

The principle of the Garden City idea is to complement the city life with nature. Ebenezer Howard's aim is to put nature at the center of the city and to create a living space for the society where nature and the city are intertwined. Howard's idea of the garden city for industrial life defines a well-balanced and low-density settlement and

a socially appropriate approach. This idea had a purpose beyond aesthetics. Barton (2016, p.50) emphasizes that:

*“Howard’s motivation sprang from concern for social justice – the possibility of a good life for all. His garden city was to provide for all classes, including the poor, the old and the destitute”* (Barton, 2016, p.50).

According to this vision, unhealthy life caused by rapid and intense urbanization is to take control of economic and social problems and to organize a balanced living space.

Howard showed this idea with the “The Three Magnets” diagram (Figure 6). In the diagram, there are three magnets symbolizing different lifestyles, equidistant from the person in the middle. The first of these magnets describes the economic and technological features of the cities, the second describes the characteristics of rural areas such as nature, sun and green, and the third describes the rural-urban combination with idea of,

*“the combination of town and country is not only healthful, but economic”* (Barton et al., 2015, p.25).

Howard did not distance the living community from urban opportunities, but at the same time created an interconnected urban system that could benefit from rural areas. Howard's Garden City approach is a solution to the problem of epidemic diseases and industrial life that people struggle for public health in cities. Barton (2016, p.51) states that:

*“Howard’s strategy and standards remain relevant today – promoting green, convivial, sustainable and healthy cities”* (Barton (2016, p.51)

Howard's Garden City model is an urban planning idea that has inspired many garden city designs from an equal public health and wellness framework in urban design practices and remains a powerful urban ideal even today.

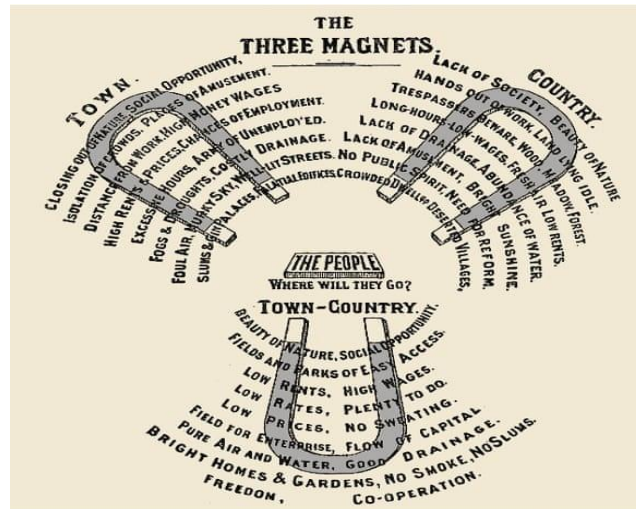


Figure 6. The Three Magnets Diagram for Garden City Model (Source: theguardian.com, 2014)

#### 2.4. The importance of clean air in the late 19<sup>th</sup> century

One of the factors which created an awareness around public health in cities during the close of the nineteenth century was lack of access to clean air. Due to industrialization, the continuous increase in the urban population, sanitation and environmental pollution have led to an increase in tuberculosis disease. Epidemics of tuberculosis was believed to be caused by bad weather and lack of open space. Towards the end of the 19th century, America was experiencing a public health crisis because of inadequate sewage and sanitation systems serving cities, recurrent outbreaks of disease, population growth, and increasing environmental pollution. In the American context, the search for a new model of urban recreation motivated by urban density and unhealthy conditions has brought forth a public debate about the need public green spaces. Public green parks, which have created a great change and development in the sense of a disease-preventing urban space in modern city planning, were defined by America's first landscape architect, Frederick Law Olmsted. Olmsted, Secretary of the Health Commission, is a leading pioneer in the design of public parks that considers community well-being in urban structure. Beyond an aesthetic pursuit, Olmsted also had the goal of an enterprise that included social dimensions. Olmsted's aim was to create democratic, restorative and healing green spaces that would be accessible to all people. For him, parks were an important point for the health and well-being of the urbanizing population. While his ideas led to the construction of city parks throughout the country, Central Park in New York, designed by Olmsted himself, is

probably the most successful and well-known example of green public parks in the US (Figure 7).



Figure 7. Central Park in New York (Source: smarthistory.org, 2015)

Olmsted's view of public parks is holistic; his aim is to improve both the physical and mental health of all members of the urban population by supporting the quality of life. According to him, parks should contribute to social development, offer restful and relaxing places that take people away from the busy life of the city. Maumi (2020, p.29) writes that, for Olmsted, parks were:

*“not just a matter of providing breathing spaces, but of allowing people to experience places capable of appeasing their minds”* (Maumi, 2020, p.29).

Central Park, which is easily accessible to everyone, regardless of class, has an effective role in urban life with its ecological, social and cultural features by combining nature and the city. Warsh (2020) notes that:

*“Sanitary reformers and park advocates commonly referred to parks as the ‘lungs of the city’ and ‘breathing spaces’ and he is expressing that it offers an opportunity to relax and escape in the density of city life”* (Warsh, 2020).

As LeBrasseur (2020) points out:

*“From the start, Olmsted recognized the positive effect of nature, noting how urban trees provided a ‘soothing and refreshing sanitary influence’-”* (LeBrasseur, 2020).

There are recreation, entertainment and gathering areas in the park, in addition

to promoting physical activities, it encourages mental well-being and supports its connection with public health by helping community bond by giving opportunity to socialize. Olmsted considering the importance of contact with nature for physical and mental health, it evaluates parks as a bridge between public health, citizens' well-being and urban planning. In this context, Central Park offered an answer to the urgent problems of the city and society, such as crowded population and unhealthy life. By integrating a natural green area into the city, it can be evaluated as a long-term public health strategy beyond just a natural landscape and recreation.

### ***2.5. Beyond Hygiene and Sanitation: Public Health as Well-being***

Improvement and developments in public health in cities were first achieved by controlling the factors that cause diseases and epidemics. These determinants of unhealthy environmental conditions such as uncontrolled growth of cities, poor quality housing, inadequate cleaning, sewage problems, lack of an effective garbage collection, and epidemic diseases led to a heightened awareness of the importance of public health. The quantifiable lack of basic needs such as access to green, natural ventilation, sunlight, access to recreational facilities, which are the modernist planning criteria for the construction of cities, was a concern for public health. The inclusion of these basic needs in the spatial planning process determines the quality of urban life and is an important design indicator in addressing public health problems in cities. The concepts of hygiene and sanitation also feed the idea of improving public health with these specific design criteria as an extension of modernist planning. Cities should be designed to meet the physical, mental and social daily needs of the people beyond the purpose of housing. In *Healthy Cities and the City Planning Process*, Duhl and Sanchez (1999, p.9) note that natural fresh air, clean water, open space and sunlight are the most fundamental quantifiable purposes for health, according to the modernist understanding of urban planning aimed at protecting and improving public health. It is important to develop an urban planning approach that reveals the importance of hygienic conditions, clean air, natural sunlight, natural landscape and green space for a livable and healthier city. Providing adequate conditions not only prevents the occurrence of epidemics, but also increases the quality of health. In *Rapid Urbanisation, Health and Well-being*, Hague (2015, p.48) points out that these quantifiable purposes, which are the most basic for public health, prevent and have the potential to eliminate many of the causes of death. Today, the definition of public

health has expanded beyond infectious disease and epidemics to include the social and psychological dimensions of health. Sanitation, air pollution, dirty water, traffic noise, lack of physical activity, social factors, access to green areas in the urban environment are the determinants of public health and well-being. These determinants affect the physical, mental, emotional, social well-being and quality of life of citizens living in cities.



Figure 8. Determinants of Health  
(Source: walthamstow-academy.org, 2022)



Figure 9. Diagram for Well-being  
(Source: thriveglobal.com, 2022)

Beyond epidemics and sanitation, health is now about physical, mental, spiritual and social well-being, life satisfaction, happiness and having positive emotions (Figure 8). It is known that positive emotions and happiness prolong life and increase its quality. Well-being has a broader definition of public health. Well-being refers to a concept that includes the psychological and social definitions of health as well as the purification of the body from disease. The World Health Organization (WHO, 2014) defines health as:

*“a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”* (WHO, 2014)

This definition of public health refers to being physically healthy and maintaining a balance with appropriate conditions in the mental and social senses. As Duhl and Sanchez (WHO, 1999, p.7) argue,

*“Not only does this statement define health, it is evidence of the public health*

*pendulum swinging away from a medical model and back towards a social model – the new public health paradigm” (Duhl and Sanchez, WHO, 1999, p.7).*

The definition transforms public health into a concept of well-being with the interaction of physical, psychological and social determinants, unlike a medical model understanding (Figure 9). In her book *Welcome to Your World*, Sarah Goldhagen (2017, p.19) argues that the environment in which person live has a direct impact on health and well-being:

*“The environments we inhabit and build can make us and our children healthy or sick. They can make us and the people we love smart or dumb. Serene or despondent. Motivated or apathetic” (Goldhagen, 2017, p.19).*

Therefore, urban design and planning play an important role in public health, which is being discussed more broadly. An urban environment, designed to the according to the physical, mental and social needs of the city and public, should promotes health and a quality of life.

An urban planning designed by taking into account the social health of the difficulties such as obesity, stress, depression, physical inactivity due to lifestyle raises the quality of life standards of the citizens. The built environment has a significant value on the mental and physical health, behavior, well-being and quality of life of individuals and communities. Calman (1998) maintains that health isn't only about living longtime, it's also associated with a more quality of life and well-being. In an urban environment; equality, easy access to public spaces, clean water and air, green spaces, recreation areas, safe environments, a sense of belonging that gives identity are critical factors of the sustainability of health, well-being and quality of life in a society.

Most part of the urban areas can be beneficial for physical, mental and social health. For example, afforestation of roads encourages walking. Walking distance access to public spaces and facilities supports physical activity, helping to reduce chronic diseases such as heart, hypertension and mental health. Having time in nature provides mental health benefits and wellness, and contacts with local communities increase individuals' sense of belonging. When approached from a simpler point of view, even the aesthetic and attractive appearance of cities can have positive effects

on people. For example, the sight of clean water flowing from a river or that of a green public park or a tree-lined road can reduce mental problems by providing psychological relaxation.

Approaching “the determinants of health from a spatial planning perspective” (WHO, 2010, p.26) public health and well-being includes the longevity of quality life, the extinction of diseases, the reduction of death rates, and the improvement of life qualities. There are still many inequalities in the improvement of public health from past to present, the important thing is to minimize these inequalities with urban design and planning. Three key points will be focused on how urban design and planning affects public health and well-being in an equitable and social cohesion way; pedestrian mobility, public green spaces and urban form respectively in chapters 3, 4 and 5.

## **2.6. Conclusion**

A brief review of the history of urbanization reveals that the conception of public health lies at the core of modern planning ideals. With the onset of the Industrial Revolution the cities grew in size and became ever more complex, resulting in a series of urban problems such as congestion, overcrowding, poor quality housing, poor sanitation (such as garbage, polluted air and water). These problems gave way to a number of reform efforts such as the passing of the Public Health Act of 1848, motivated planning initiatives (such as those conducted by Olmstead in the US or by Howard in UK), and galvanized modernist planning ideals that equated public health with quantifiable standards such as access to spacious, daylight, open public spaces, fresh air, the desire to be intertwined with nature, green areas, hygiene of the urban space. Today the definition of public health is undergoing profound change whereby well-being comes to define a more holistic. Health now expresses a view that reflects the connection between human and daily life outside of a medical framework. This view refers to a physically active body, a positive mindset, a healthy psychology, social and cultural connections and higher life satisfaction.



## **CHAPTER 3: THE RELATIONSHIP BETWEEN WALKABILITY AND WELL-BEING**

Chapter 3 explores the implications of pedestrian mobility on well-being and quality of life in urban areas. Urban design and planning in rapid urbanization brought along urban transportation problems. When urban growth is not matched with an effective public transit system, citizens tend to rely more on private car ownership even for daily needs that could be met within walking distance. The chapter discusses how pedestrian-friendly active transportation is one of the key criteria for designing cities that are conducive to public health and that have, a direct positive impact on citizens' quality of life.

The discussion initially focuses on the issue of well-being in urban settings, such as the impact of pedestrian mobility on physical health (promoting exercise, reducing the rate of chronic diseases such as obesity, diabetes and prolonging life expectancy). It continues with an examination of how the overall quality of life can be improved by upgrading mental health, providing equal opportunities and creating safe spaces and after providing opportunities for social interaction, designing mixed-use neighbourhoods. Finally, the discussion considers the environmental benefits of walkability, such as reducing traffic, preventing noise pollution, and better air quality. The chapter then turns to a discussion of livable urban planning proposals, namely the concept of the 15-Minute City, and Copenhagen and Amsterdam Bicycle Cities as examples of pedestrian oriented walkable city schemes.

Pedestrian mobility at the center of urban transportation is extremely important for healthy societies and environmental sustainability within the framework of public health-oriented urban planning. In urban planning, it is a necessity to design streets and neighbourhoods that are closely connected with transportation networks that support active mobility, and to should be preferred in terms of public health, social, cultural and environmental benefits. The chapter highlights the importance of pedestrian mobility by discussing its contribution to cities and quality of life in city planning.

### ***3.1. Walkability in Cities***

While the relationship between public health and urban planning had historically focused on factors such as urban sanitation, access to clean water and fresh, and housing provision, today discussions around public health in cities focus mainly on issues that promote active healthy, and sustainable lifestyles that would help prevent chronic diseases and increase urban dwellers' overall well-being. The main risks to public health in today's society are physical and mental illnesses caused by lack of exercise and physical activity. As the World Health Organization (WHO, 2010, p.10) points out, physical inactivity negatively affects public health as 6% of deaths and the fourth biggest risk factor (Figure 10).

Studies show that urban planning and design strategies have an effective role in creating healthier and livable areas. Lifestyle preferences, physical inactivity and a sedentary lifestyle constitute an increasingly important problem and significantly affect the general health of people all over the world. Non-communicable chronic diseases such as obesity, lung diseases (asthma), cardiovascular, diabetes, hypertension, stress, depression, and behavioral disorders which affect the quality of life, are increasing day by day and disrupt the general health of the society.

When considered from the framework of urban design, the widespread use of automobiles for transportation in the urban environment prevents the encouragement of physical activity and increases many different chronic diseases including risk factors related to a sedentary lifestyle. As a report by the architectural firm ARUP (2016, p.18) notes:

*“Already in the 1960s, a critical movement led by thinkers like Lewis Mumford, Jane Jacobs, William H. Whyte and Jan Gehl began questioning car dominance, driven by the concern for the decline in the human-focused approach to urban projects”* (ARUP, 2016, p.18).

It is necessary to approach active mobility routines, which are an important health aspect with the built environment, with a comprehensive and holistic view to understand their impact on personal health, behavior and lifestyle. For a livable and healthy environment, it is necessary to focus on planning proposals that prioritize pedestrian and bicycle mobility.

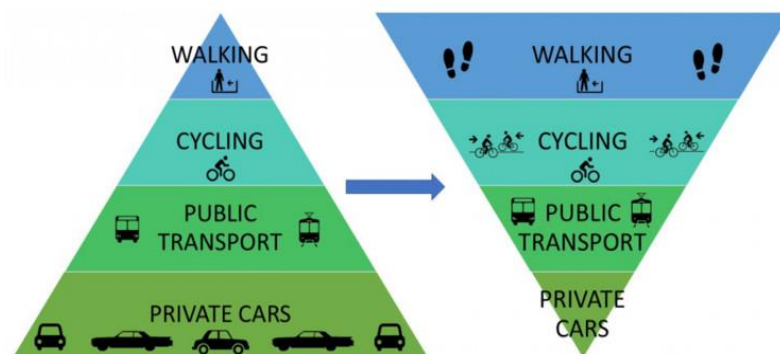


Figure 10. Walkability Scheme in Urban Design (Source: archdaily.com, 2021)

As Tran (2016, p.11) states:

*“Though in developed countries, as well as in many developing countries, the standard of living and economic prosperity are increasing compared to the past, it is not always and necessarily going hand in hand with the ‘quality of life’ and health of the population”* (Tran, 2016, p.11).

The urban environments in which we live have an impact on global health issues and well-being, and a well-planned city encourages an active lifestyle. There is a growing awareness in planning cultures about the importance of walkability and physical activity linked to pedestrian mobility. Promoting physical activity, walking and cycling and thus preventing chronic physical and mental illnesses in urban planning, is of major importance in a global context, from a public health and well-being perspective.

### **3.2. Pedestrian Mobility as Physical Activity**

In order to lead a healthy life in the urban environment, healthy and sustainable environmental practices are needed for everyone instead of measures at the individual level. While healthy lifestyle is affected by many factors in city planning, one of the most important of these factors is the habit of physical activity gained through active travel.

Active travel can be defined as forms of active mobility that includes walking and cycling as choices of transportation in one’s daily commute to schools, workplaces, local shops, restaurants, public buildings or community services. The

phenomenon of pedestrian mobility aims at urban planning that offers a physically active life and improves health from a spatial planning perspective. Designing a built environment that supports active lifestyles and individual health in urban planning is in the benefit of the entire community. For this reason, the inclusion of pedestrian mobility in planning makes the role of the planned environment important in protecting health and increasing well-being by transforming active mobility into a routine habit of daily life.

Urban design interventions affect the health of individuals and communities directly or in a way that can be seen after a while. Focusing on human-centered urban planning rather than motor vehicle-centered planning is central to the view that walkable environments can improve health and well-being. Streets and neighbourhoods that support walkable and active travel play an important role in creating healthier cities.

The widespread reliance of cars, which is directly linked to an urban environmental design that encourages a sedentary lifestyle, is causing an increase in passive types of travel and a reduced tendency for people to action and walk. ARUP's *Cities Alive* report on urban mobility (2016, p.17) concluded that the reliance on motor vehicles in planning hinders walkability in the daily life of the community and that the resulting impact of traffic can be seen in neighbourhoods without pavement, where parked cars make public spaces unusable and urban highways dividing neighbourhoods caused by suburbs. Inadequate walking infrastructure, high number of vehicles and related traffic congestion, noise pollution, and poor air quality are among the causes and consequences of poor walkability in urban environments.

Giles-Corti et al. (2015, p.121) point out that around five million person around the world die each year due to physical inactivity. The physical activity gained through the body movement offered by walkability and cycling has a great impact, especially in the struggle against obesity which presents a global public health problem. In addition to obesity, a sedentary lifestyle is associated with chronic risks such as high body fat, diabetes, cholesterol, cardiovascular and cancer, and death. Physical inactivity is closely related to these health conditions and is directly affected by the built environment. Pedestrian mobility provides protection from disease and illness by minimizing these risks that affect the quality of life, as well as medical methods. Studies show that there is a direct relationship with individual healthy and active mobility. Walking and cycling, which support an active lifestyle, are important for the

general health and quality of life of persons of all ages. Pedestrian mobility helps to maintain the functioning of the body, reduce fat, protect muscle mass, increase fitness, increase endurance, reduce muscle and joint pain, strengthen bones by developing muscles and improve health.

Another point that should not be ignored that supports physical activity and walkability in the urban environment is the design criteria of neighbourhoods with diversity for community needs. Pineo and Rydin (Rics, 2016, p.13) define:

*“a combination of factors which make a neighbourhood easier and more convenient for pedestrians: street connectivity, land use mix and residential density”* (Pineo and Rydin, 2016, p.13).

The physical functionality of the neighbourhoods can be measured by an active society by providing citizens with safe access to daily needs with wide pedestrian and pavement roads and active mobility modes, increasing the number of people walking and cycling, as well as developing walking behavior in children from an early age. Because walkable neighbourhoods create healthy cities and communities. Increasingly, examples show that living spaces that support pedestrian mobility are healthier communities and environments than other places, as they encourage active mobility and minimize car use.

Pedestrian mobility not only improves physical health, but also helps improve public health and quality of life in cities by making streets more attractive to people with these benefits that promote urban sustainability, such as a safe environment, less traffic noise, clean air. In the context of urban planning, the inclusion of active modes of transportation, where more people can gain mobility, in the urban environment shows the understanding of having more sustainable, cleaner urban environments and happier people.

### ***3.3. Well-being and Pedestrian Mobility***

According to London (2020, p.19),

*“Designers must work to encourage active travel in their plans to counter the problem of car dependency, which is a leading contributor to many ‘avoidable’ illnesses”* (London (2020, p.19).

Pedestrian mobility plays an important role in improving health, well-being, happiness and mental health in cities. Obstacles to active travel, such as inadequate infrastructure of pedestrian and bicycle paths, preference for motor vehicles, traffic, traffic noise, and polluted air conditions in urban areas are associated with more risks such as anxiety, depression and stress. Being exposed to the number of cars and traffic noise on the streets creates unsafe environments, especially for young people, and affects mental health by causing learning, focus and anxiety problems. ARUP's report (p.37) states that the happiness and mental health benefits of walking reduce stress, anxiety and depression, improve sleep, and increase self-confidence. Accessible public spaces, interconnected streets, and the design of safe and interesting walking routes that support non-motorized transportation that will make walking in the city enjoyable encourage people to walk (Figure 11). Likewise, it is effective with applications beneficial to urban design such as finding pedestrian-car mixed streets and neighbourhoods that give priority to pedestrians, controlling traffic jams caused by automobiles and calming the traffic. In many scientific studies on pedestrian mobility and the built environment, it is recognized that active transport supported by walking and cycling has a strong and positive effect on mental health and well-being. For instance, in their report on *Making the case for investment in the walking environment: A review of the evidence*, Sinnett et al. (2011, p.13) state that according to the study, citizens who walked for more than 8.6 minutes a day reported better physical and mental health. A walkable community provides a safe environment for individuals. Schools, walkways, wider pedestrian crossings and sidewalks within walking or cycling distance become safe for children and adults. Children who walk or cycle to school benefit from a positive impact on their mental health as well as being becoming more physically active (Cushing and Miller 2020, p.121). Mahdjoubi and Spencer (2015, p.138) states that physical activity is effective for less stress, minimum mental fatigue, and better cognitive functioning. Encouraging active types of travel has positive effects on mental health and happiness, such as helping individuals alleviate chronic mental symptoms, strengthen cognitive functions. Similarly, Sallis, Millstein and Carlson (2011, p.34) state that physical activity and mobility are connected with better sleep. At the same time, it provides an active mind structure and helps psychological and mental development such as facilitating focus, remembering and thinking and increasing self-confidence.

Recently, many cities have focused on urban design policies that incorporate

walking paths, extended pavement widths, safe traffic areas, and bicycle path networks to encourage a more active lifestyle among their residents. For example, in Paris, new cycling lines are being added to widen cycling lanes and reduce car spaces. As Gehl (2010, p.113) observes,

*“In several cities such as New York, Sydney and Mexico City work is ongoing to develop infrastructure and city culture so that pedestrian and bicycle traffic can occupy a prominent place in the daily pattern”* (Gehl, 2010, p.113).

In London as well, pedestrian paths and sidewalks are widened, additional bicycle paths are designed, and restrictions are imposed on the use of motorized vehicles in certain districts. Likewise, Denmark and the Netherlands are among the countries that have goals that prioritize the use of bicycles and make this sustainability a way of life.



Figure 11. Pedestrian Mobility in City (Source: Institute for Transportation and Development Policy, 2018, p.34)

Urban design is an important factor that gives us good habits in shaping daily life. Safe and accessible planning that supports active living is key to improving psychological health and well-being by combating lifestyle-based chronic diseases. A city design that supports walking and cycling increases physical activity and exercise, thus improving physical and mental health and increasing the well-being of individuals and society. Because an active society is a healthy and happy society. Designing urban areas that encourage walking and cycling can help set the groundwork for a healthy society and ensure that communities remain physically active.

### ***3.4. Encouraging Local Activities***

In order to increase livability and well-being in cities by promoting and improving walkability, it is necessary to direct people to public spaces. Designing streets that can provide a walkable network makes it easier for people to access public spaces. Directing the public to local activities by designing pedestrian-centered mixed-use lands neighbourhoods is one of the current arguments in creating a walkable network structure. As Rafiemanzelat et al. (2017, p.102) argue, that areas with a high level of local diversity and providing short-distance access to services and public transportation have the potential to be a sustainable area with a high level of walkability by providing opportunities for pedestrian mobility. Thus, the pedestrian mobility-oriented design of cities makes it possible for people from all status and all age groups to benefit more equally. Streets and public spaces designed accordingly serve not only able-bodied persons, but also persons with limited mobility (elderly, wheelchair users, pregnant women, etc.) and can be an extension of a public policy aiming at the health and well-being of the general public.

A healthy urban transport network is a system that the entire population can easily access. London (2020, p.85) maintains that main point is to design an environment where people can do most of their daily activities with walking and at the same time can do it easily and safely. A well-planned active mobility connection helps local citizens travel easily and safely while engaging in urban life walking or by bicycle. A transport network based on active modes of transport reveals the potential to make more active use of the urban experience for access to daily needs and local facilities.

### ***3.5. Walkable Mobility of Neighbourhoods***

Neighbourhoods are social spaces that enhance local life, where a sense of community identity is infused with active mobility in the creation of urban community. As pointed out in a 2008 report on the incorporation of health policies into urban planning,

*“Neighbourhoods imply a sense of belonging and of community, with some shared educational, shopping and leisure activities that provide a focus for social life”* (Public Health Advisory Committee 2008, p.34).



In the context of the city, the relationship of pedestrian mobility with neighbourhood design is important in order to create active societies.

ARUP's Cities Alive report (2016, p.49) notes that the built environment and the sense of belonging to a society are interrelated. A car-oriented life can cause people to isolate themselves and lack communication, which is a problem for mental health and well-being. Creating opportunities for social interaction is an important criterion of good mental health, such opportunities not only encourage communication among people, but they also provide individuals with a sense of belonging to a community. Barton et al. (2015, p.100) explain that opportunities for walkability increases the possibility of social relations and communication within a small space where school, employment, restaurants, local shops and facilities can be easily accessed. Walkable neighbourhoods created by pedestrian mobility allow people to communicate more with people from different statuses in routine activities locally such as eating, going to work or school, shopping, public facilities and increase the sense of sharing and community (Figure 12). Increasing social interaction between people plays a role in mental health and happiness in terms of nurturing and sharing the social and cultural values of citizens.



Figure 12. Pedestrians in local areas and Neighbourhoods (Source: Gehl, 2010, p.119)

The automobile-based transportation system creates the feeling of loneliness and isolation. People who regularly walk or cycle as part of their daily routine improve their emotional and mental health as they get the opportunity to interact with other people on the road route. A well-designed neighbourhood provides the basis for a good

social environment, which defines a sense of community, provides social cohesion and connections, and further mitigates sense of isolation.

In their book *Creating Great Places: Evidence-Based Urban Design for Health and Well-being*, Cushing and Miller (2020, p121) argue that the independent mobility of children and young public in neighbourhoods helps them develop their sense of activity, confidence and abilities. Different age groups can benefit differently from walkable neighbourhoods. For instance, designing neighbourhoods with pedestrian mobility in mind may have a positive impact on the psychological development and well-being of children and young people. According to the Martin and Wood (2014, p.149) the developmental abilities of children and young individuals develop when they have the opportunity to move independently by walking or riding a bicycle. It is the task of urban design to provide children and young people with an independent and safe environment for the healthy communities of the future. The ability of children and young people to walk or ride a bicycle on their own not only helps increase their social interactions, but also helps them to move independently without the need for an adult, helping their self-confidence to be better. Independently from adults, providing transportation for young people and children at distances appropriate for their level helps them develop their sense of self-confidence, achievement and skill. For example, children and young people who walk to school together and have safe access by cycling can have the opportunity to interact with others along the way and have a high potential to become friends because they communicate. In this way, it supports the formation of a sense of community of young individuals and children. All factors that strengthen social infrastructure bonds positively affect mental health.

Considering the widespread adoption of active travel to improve public well-being; the design of local neighbourhoods, safe pedestrian and bicycle paths, wide sidewalks, short-distance access to daily necessities, improve community cohesion, restricted traffic encourage the active participation of all residents in city life. Neighbourhoods designed for pedestrian use are complementary part of a healthier population in terms of people's mental health and quality of life.

### **3.6. Environmental Benefits of Walkability**

Walkability may also have a positive impact on the environment. Designing for walkability might help achieve sustainability goals by balancing carbon emissions, improving air quality and reducing heat gain in cities.

Air pollution, carbon emissions, traffic congestion and noise pollution caused by the use of motor vehicles in cities have a great impact on environmental quality. Promoting walking and cycling not only makes society healthier, but also provides benefits for environmental health. Prioritizing pedestrian mobility over driving helps reduce carbon emissions, reduce air pollution.

A well-planned city should have a combined use of public transport and bicycle networks, pedestrian walkways and clean, safe and sustainable for active travel and mobility. The lack of a car-dependent life offers local people the opportunity to live in safer areas. Safe streets, promoted by walking and cycling paths, can help reduce vehicle speeds by slowing down traffic, thus providing a chance to create a calmer and quieter environment. An urban environment with pedestrian mobility can provide better health, a cleaner environment and fresh air for the all community.

Increasing the level of walkability also makes the environment safer. It offers cost-effective and healthy urban planning that supports active mobility with safe walkways, cycling networks, well-designed pedestrian crossings, wide sidewalks, walkability and cycling. At the same time, being involved in safe active travel and creating an environment that brings people together reveals the importance of

*“mental well-being is closely related to social well-being”* (Barton, 2016, p. 99)

for a healthy society.

People tend towards lively streets with more people, and such environments are more likely to be walked. The decrease in the number of people in places where there is less active mobility causes more empty streets, anti-social behaviors and unsafety areas. Lehman and Boyle (2007, p.5) remark:

*“The way a community is designed, built, and maintained determines its walkability”* (Lehman and Boyle, 2007, p.5).

Walkable communities provide safe environments to the community by allowing people to communicate and interact with each other. In an urban environment where there is walkability, people feel safer as the number of people increases and becomes more social. Barton (2016, p.204) point out that about the safety in streets,

*“...if there are people around, going to local schools and shops, meeting casually, and there are ‘eyes on the street’, then (as Jacobs was at pains to argue) places can feel convivial and safe”* (Barton, 2016, p.204).

Considering the loneliness and isolation level and lower crime rate in a crowded society, Jacobs' "eyes on the street" approach directs people to public spaces.

Living places, where a social infrastructure is formed and the number of people is high, enable children to grow and develop in safe environments. For the whole society, including children, young people and individuals with limited mobility, walking and cycling without using a motor vehicle, simplifying transportation and increasing accessibility help life continue more easily. Walking paths, wide sidewalks, bicycle networks and well-designed neighbourhoods and streets help to increase the feeling of safety by increasing the possibility of movement. The traffic level is low on walkable streets and it provide safe areas where children can move and play comfortably.

Urban design based on active travel has a more active potential to experience the environment. As a tool of a local community with pedestrian mobility, it has positive effects on physical and mental health as well as sustainable social and economic values that improve environmental health encourages such as social cohesion, sense of community, equality, safe places, sense of place, clean air, low noise level and green transportation. There are exemplary pedestrian and bicycle friendly cities in the world that support active transportation policies. Copenhagen and Amsterdam, which are bicycle cities that prefer active transportation instead of motor vehicles for daily transportation, are examples of healthy and sustainable urban planning.

### ***3.7. The 15-Minute City***

The 15-Minute City design model, developed by Paris Sorbonne University faculty member Professor Carlos Moreno, aims for sustainable, healthy and more livable cities. Moreno proposes a neighbourhood composition where all functions are combined in a compact fashion, as opposed to the dispersal of vital activities in different places (Figure 13).

The 15-minute City reveals an approach to spatial fiction by integrating the

basic needs of the citizens into social life. The 15 Minutes City approach is a city model that provides access to all daily needs of citizens within walking distance and serves the entire population. This concept aims to bring city life to the local area by directing people to street and neighbourhood living spaces, thereby increasing the quality of life. It allows to increase the number of active transportation vehicles and people provided by walking and cycling and to strengthen the concept of neighbourhood and the sense of community with its social networks.

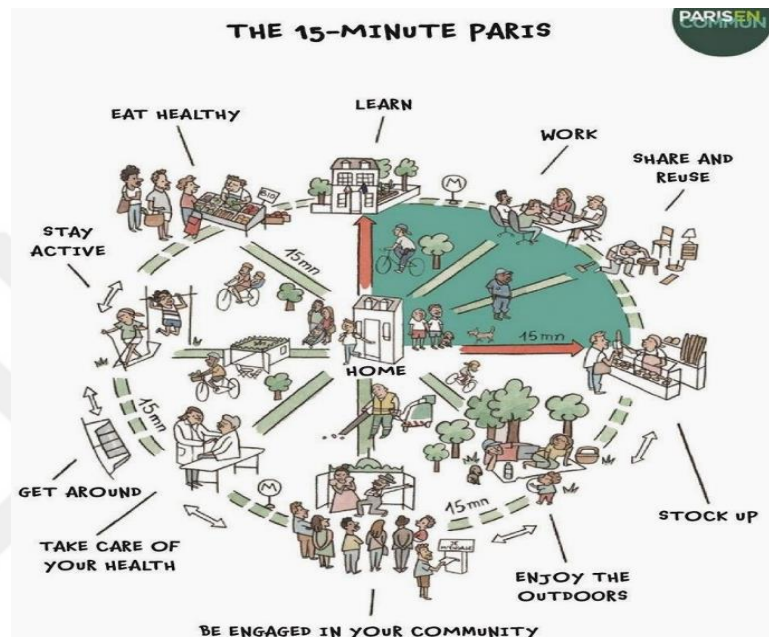


Figure 13. The 15 Minutes City Model (Source: commonedge.org, 2022)

Moving away from the idea that the car is the center of mobility; limiting traffic density, improving air pollution caused by vehicles, short-distance access, reducing stress in traffic jams, quieter streets and supporting active and sustainable life are included in this design concept. Designing 15-minute cities of pedestrian-friendly and connected neighbourhoods is a long-term project as detailed planning and infrastructure are required. Today, there are cities close to this understanding to improve urban life. For example, the cities of Amsterdam and Copenhagen have a planning that supports active mobility. Cities have the opinions of urbanism, which is about accessing the places desired to be reached by the proximity factor in a short time using bicycles. Urban planner Franken (2020) emphasizes the connection between bicycle-oriented planning policies and the concept of The 15-Minute City:

*“...%83 of all neighbourhoods in the Netherland have a supermarket and pharmacy within fifteen minutes cycling distance” (Franken, 2020).*

Other cities, such as Madrid, Milan, Oregon, are also trying to change to a 15-minute city model vision that

*“using the lens of walk/bike travel time”* (Luscher, 2020),

to be less stressful, cleaner, easier to access, more socially connected, and more active.

In this respect, the 15-Minute City proposes a model of urban living designed around people. For a more innovative and sustainable city model, it can be argued that cities should be designed to address this concept with an emphasis on creating spatial connections at the local levels.

### ***3.8 Bicycle Cities of Copenhagen and Amsterdam***

Today, some cities are turning to bicycle infrastructures instead of motor vehicles for daily transportation to protect community health and well-being and the environment. The cities of Amsterdam and Copenhagen are the two major cities that are distinguished by the high percentage of bicycle use in daily commutes.

These cities are the most successful cities that implement urban design strategies for active mobility with an extensive bicycle infrastructure serving urban residents. The cycling culture in the cities starts at a very early age and continues into adulthood. The bicycle-friendly cities of Amsterdam and Copenhagen are an exemplary city models that places emphasis on the development of the bicycle network in urban infrastructure for daily transportation. These improvement strategies are of great importance for the creation of a healthy future in urban design (Figure 14).

Danish architect and city designer Jan Gehl argues for putting pedestrians and cyclists first in the design of city centers. Gehl, had a great influence on the design of cycling and walking networks for the city of Copenhagen. His firm Gehl Architects receives numerous commissions from cities that seek to encourage walking and cycling, and further limit the use of motor vehicles through urban design measures. Gehl (2010, p.183) states that, most of the transportation in Copenhagen is provided by bicycle transportation and the level of car traffic is much lower than in other European cities.

There are clear health and social benefits of incorporating cycling

infrastructure policies to shape the design of streets and neighbourhoods. In addition to reducing vehicle traffic; safe environment and clean air environment, encouraging socialization and eliminating existing inequalities, offer equally opportunities for all population to use the city. The pedestrian movement-oriented design layout between the streets forms the basis of creating a social life for the all user public. Cromwell (2013) writes that Jan Gehl's critique has been directed at modernist urban design which

*“creates a dull urban experience for pedestrians, depriving them of interaction with others, and resulting in lifeless cities where people do not want to live or visit”* (Cromwell, 2013).



Figure 14. Active Mobility in Copenhagen and the Amsterdam (Source: Gehl, 2010, p.10)

Active mobility, which keeps the relationship between the pedestrian and the city sustainable and continuous, begins a more interesting, pleasant and lively public life when designed on a human scale, for living, going to work, shopping, playing games and walking around. The fact that the factors affecting air pollution, climate and public health create a global problem increases the fact that the priority in transportation is given to active mobility with the use of bicycles.

The transport policies of Copenhagen and the Amsterdam create a network

covering social and environmental development strategies in the field of energy use, air, noise pollution and public health, as a result of the addition of cycling as a means of travel to urban transport. This is surely a long-term policy that aims at changing commuters' behavior with the long-term health benefits. The fact that pedestrian-oriented streets motivate active mobility awareness requires that these practices be adapted to local conditions. A good example of how rethinking mobility options directly affects the well-being of urban residents.

### ***3.9. Conclusion***

Today, promoting pedestrian mobility by integrating pedestrian and bicycle-oriented transport networks into planning schemes help achieve healthier and livable cities. When pedestrian mobility is adopted as a key principle in guiding the design of cities, the resulting urban form would allow urban residents to develop stronger connections with their immediate urban environments. Walkability, is the most basic method for people to be included in urban life. A transportation system, which supports pedestrian mobility and bicycle use, facilitates the development of a vibrant, safe and healthier lifestyle in cities. The planning of cities should be considered from a holistic point of view and involve active travel to improve the quality of life, with the added benefits (both physical and mental) to public health.



## **CHAPTER 4: THE WELL-BEING AND ACCESS TO PUBLIC GREEN SPACES**

Public green spaces are an important component of cities for the creation of a healthy society. The focus of this chapter is on how to design healthy cities for healthy societies from the perspective of the availability of urban green spaces. The study explores how accessible urban green spaces at the city scale add to the quality of daily life, improve public health and well-being, as well as benefit the ecosystem and the urban environment.

It is generally argued that access to nature and green areas makes individuals physically and mentally healthier, and contribute to people's well-being and quality of life in urban areas. As discussed by London (2020, p.152), access to all forms of greenery, can offer physical and mental healing to the challenges of today's modern life, and our proximity to public green spaces increases our potential to use them. Sullivan (2014, p.422) emphasizes that green environments with trees, plants and open space reduce mental fatigue and stress anxiety and are associated with increased sense of well-being, peace, greater satisfaction with the living place, and lower crime. Urban green spaces are a key factor to consider in addressing environmental health, along with many benefits to individual and community health and well-being. Having time in nature and green areas supports active mobility and exercise, improving the physiological health of individuals, reducing daily stress and improving mental health, as well as providing environmental benefits such as improving the ecosystem, protecting biodiversity, climate change, clean air and reducing noise.

It is important to emphasize the importance of accessing urban green spaces for a more sustainable and livable city. The importance of urban planning and the built environment in improving the physical and mental health of the population is increasingly recognized. It is important to establish a connection with nature at the urban scale for healthy cities. Planning that allows people to connect with nature is part of a vision of healthy urban planning that focuses on improving public health and well-being.

#### ***4.1. The Effect of Green Spaces on Physical Health***

Urban green infrastructure is one of the most important factors in increasing well-being and quality of life. Corkery (2015, p.244) notes that modern research into the physical benefits of connecting with nature supports nineteenth-century urban planners' view that access to sunlight, fresh air and footpaths improves public health. Access to nature and green spaces for exercise and recreation plays an important role in reducing health problems such as cardiovascular, diabetes, respiratory illnesses, hypertension and heart disease (London, p.29). However, there are not enough green spaces in cities. Cities should be designed in ways that would facilitate contact with nature.

As discussed in Chapter 2, urban planning, in which pedestrian mobility such as walking and cycling is not supported and car transportation is active, causes many diseases with a sedentary lifestyle. All kinds of physical activities performed in urban green spaces and nature are called green exercises (Loureiro and Veloso, 2017, p.157). Green exercises have both physical and mental health benefits. Well-designed green spaces with short distances to places where daily needs are found such as home, school, workplace, shop, public facilities play an important role in the formation of active life by encouraging walking, cycling and daily exercise together with them (Figure 15).



Figure 15: Public Green Spaces (Source: greenblue.com, 2020)

Many studies emphasize that access to green spaces and nature have a positive impact on human health. Barton (2016, p.89) explains that according to a research in Europe, neighbourhoods with more green areas have three times the chance of being

physically active and 40 percent less likely to be obese. Studies indicate that living close to green areas in cities directly contributes to the level of physical activity. This is because the presence of well-designed green spaces designed in harmony with active modes of transport such as walking, running and cycling encourage people to be more active. Children's playgrounds, parks, green areas, gardens, grass areas are important places that encourage physical activity.

#### **4.2. The Link between Public Green Spaces and Well-being**

Croucher, Myers and Bretherton (2008, p.27) state that:

*“While the diseases consequent to lack of exercise and sedentary lifestyles remain such a public health concern, it might be easy to give less attention to impacts of greenspace on general mental health and well-being, however it is the restorative effects of greenspaces and contacts with nature where the evidence is most compelling”* (Croucher, Myers and Bretherton, 2008, p.27).

In urban areas where nature and green spaces are sufficient, the healing and therapeutic effects of nature are becoming increasingly important. As the perspective on health and well-being changes in today, the value of green spaces and nature in cities is increasing. When viewed from the perspective of planning and well-being, urban green spaces are public spaces that provide the opportunity to provide positive mental activities such as rest or relaxation, as well as physical activity and health benefits. With this effect, it is directly related to the quality of life and well-being of citizens. The design and development of green spaces, which positively affect the quality of urban life, emphasizes the relationship between urban planning and public health (Figure 16).

In nowadays, built environment factors such as population density of cities, traffic congestion with motor vehicle use, environmental pollution such as noise and air pollution, physical inactivity, poor social interaction, and inability to easily access green areas cause mental fatigue by causing stress. A tired mind has consequences that affect quality of life and health, such as inattention, inability to focus, stress, and lack of communication.



Figure 16. Diagram of Green Spaces (Source: Vidal D., Barros N. and Maia R., 2020, p.481)

Green spaces give individuals the opportunity to interact with nature. Activities such as spending time in nature, being active, doing sports and exercising, walking, running, cycling, playing, gardening are all suitable ways to connect with nature. Souter-Brown (2014, p.78) mentions Kahn's study with runners and notes that those who exercise in nature have lower anxiety levels and improved positive mental thoughts than those who do in the gym. According to Goldhagen (2017, p.46) looking at or watching a natural landscape for a short time can help stabilize a high heart rate. It is known that easy access to green spaces, being in touch with nature and interacting, spending time or watching the scenery reduce stress, increase happiness and self-confidence, and have restorative effects on mental health. Corkery (2015, p.242) refers to Rachel and Stephen Kaplan's "attention restoration theory", which focuses on nature and human experiences in the natural environment to understand how nature improves physical and mental health. It is one of the most important theories that includes the restorative potential of natural environments to reduce stress by directing on the benefits provided by nature (Kaplan, 1995, p.169). Studies indicate that access to green areas and nature, which offers a calm and peaceful environment, has positive effects such as good mood, increasing attention and concentration, reducing stress levels, and improving behavior (Dannenberg, Frumkin and Jackson, 2011, p. 231). Spatial and functional green spaces, which work as a whole, allow for better mental health and better living conditions when balanced with the urban texture.

Landscape places such as grass, plants, trees, water elements and gardens help

people to get purified of mental exhaustion. Experiencing nature in the city with elements such as watching a green landscape, planting trees on the streets, taking care of agriculture in the gardens, hearing the sound of birds, plants, and the flow of water has healing effects by relaxing and improving our minds. Croucher, Myers and Bretherton (2008, p.18) explain that, the more time persons linger in the green areas, so much less stressed they perceive. It is stated that walking, exercising or being active in walking, running and cycling paths, trees, grasses, sports facilities, playgrounds and activity areas, parks and green areas are associated with mental health (Figure 17).

Access to green spaces is as important as the benefits it provides to adults, but also especially for the development of children. A life away from green areas and nature reduces the opportunities for children and adolescents to move freely and thus their experience and development skills. Barton (2016, p.97) states that:

*“In relation to children, Dutch researchers show that contact with nature enhances child development by encouraging recovery from stressful experiences and providing opportunities for exploration and play”* (Barton, 2016, p.97).

Parks and open green areas are considered as play, activity and activity areas for children, which offer a safe environment away from vehicle traffic. In his essay “Urban Green Spaces Are Our Most Effective Tool to Improve Urban Life,” Ballester (2020) explains that green spaces support motor skills and cognitive abilities in children and can reduce the syndromes of attention deficit and hyperactivity behavior disorder. The sense of playing, which plays an important role in child development, has an important place for children's self-knowledge, motor development, creativity, sense of self and mental health. Being in nature from an early age, acquiring skills through play, active use of the senses, playing games to harmonize with others, create a sense of security and freedom, and help the child establish a bond with the environment. With the awareness that healthy children contribute to the creation of healthy societies in the future, children's relationship with green spaces and nature supports them to have better physical, mental and social well-being.

Nineteenth-century landscape architect Frederick Law Olmsted believed that having access to nature relieves stress and improves mood. Olmsted conceived urban green spaces as ‘the lungs of a city’ (Jennings, Johnson and Gragg, 2012, p.1) in the city demonstrates the importance of nature and green spaces. In an article on the

Central Park Conservancy, Warsh (2020) notes that Olmsted defined being in Central Park as experiencing a “feeling of relief...” resulting from moving away from the stress and intensity of urban life. As Olmsted designed, exemplary green areas are required in cities, where all people of all ages and places can access, communicate, use for exercise, and plan to design and integrate multifunctional green spaces and parks with the sustainability of the environment.

A good way to integrating green spaces into urban areas is to integrate abandoned and unused areas (such as old railways) into urban environments, connecting different routes with pedestrian paths and bicycle paths. These areas, which can be easily accessed by many users without using a vehicle, offer active features such as walking, running and cycling, as well as passive activities such as sitting, resting and watching the surroundings. The High Line in New York City, which is an urban transformation of an old railway, can be shown as an example of a green breath in the city center. The High Line creates a suitable place not only for exercise but also for walking through the trees, sitting and watching the pleasant green scenery, reading a book, sunbathing or chatting with other people.

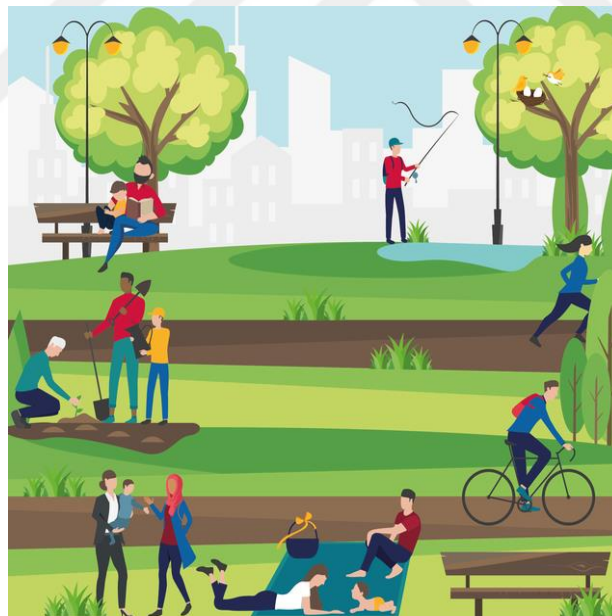


Figure 17. Activities in Public Green Spaces (Source: eea.europa.eu, 2022)

Another example is, Promenade Plantée in Paris, France, which provided the inspiration for New York’s High Line. It is an elevated linear park built on top of obsolete Vincennes railway line. Promenade Plantée is a good example of integrating nature into the city; it includes various activities such as walking paths, bicycle tracks, sitting units, picnics, sunbathing, reading books, playing games, surrounded by trees,

and has a functional diversity that gives a feeling of being in nature with the combination of small garden spaces created by plants, water elements and fountains. This kind of parks, located in the city life, offers to experience the urban elements to improve the quality of life, which creates a feeling of being away from the noise of the city in the urban environment.

Adapting the unused urban areas to the urban fabric in a green way improves the sustainability and livability by giving character to the place with its functional dimensions, along with improving the aesthetics of the surrounding landscape.

### ***4.3. Green Networks and Urban Communities***

Urban green spaces are public spaces that provide an opportunity for people to escape from the chaos of complex city life, relax, relieve stress and socialize. The weakening of social interaction and community ties in cities is a factor that affects mental and social well-being. Poor communication and interaction with other individuals, isolating oneself from society, increases the feeling of unhappiness, loneliness and depression. Public open green spaces provide opportunities for individuals to be included in social life. In this respect, green spaces are important to support the community network by reinforcing social communication and friendship ties.

Green areas have various usage functions and users. Public green spaces, parks, forests, nature provide opportunities for social interaction. It is important to combat inequalities that the natural environment, green space, parks are locally accessible to all people. Access to nature and green space with good planning promote psychological health, mental well-being, social connection and community cohesion. It ensures that different user groups such as children living locally, young individuals, adults, individuals with limited mobility, and the elderly population can benefit equally. As Barton (2016, p.99), points out, 'place community' and public green spaces encourage social interaction and create community bonds, thus giving that place a sense of belonging and identity. Research on physical and mental experiences in public green spaces shows that green spaces create a sense of belonging and encourage human relationship to develop. Corkery (2015, p.240) states that including local parks and gardens, streetscapes and playgrounds into daily habits in urban design help create 'everyday' landscapes that help promote social interaction and physical activity. Green infrastructure has values that increase social well-being, such as bringing people

together, strengthening social connections, communicating with other people, increasing interaction, the opportunity to meet new people, and being involved in activities. Berto (2014, p.399) supports that in this way, public green spaces reduces the sense of social isolation of individuals, supports the ability to communicate with other people and enables them to be a part of the society. An urban life away from green areas in traffic noise limits communication with other people. Planning and developing designs that support people's access to local green spaces, parks and nature is important. According to London (2020, p.160), green spaces should be easily accessible and open to everyone. In an urban environment designed with such concerns in mind, access opportunities such as walking and bicycle networks that encourage active mobility increase the use of green areas and the number of users. Public green spaces with usage functionalities and diversity can create a perception of security as well as recreational and social space. Well-designed open green spaces and parks with easy access are home to more individuals. Dannenberg, Frumkin and Jackson (2011, p.110) believe:

*“Walkable, humanscaled, and safe neighbourhoods with shared public and semipublic spaces such as parks, squares, and tree-lined neighbourhood streets can promote, or at least provide opportunities for, health-promoting social interaction”* (Dannenberg, Frumkin and Jackson, 2011, p.110).

Along with being included in the community, it ensures the creation of social cohesion and at the same time reduces the crime, positively affects the sense of safety by making people feel in a safer environment. A safe environment increases exercise and physical activity, increases socialization and creates a sense of community.

Open green spaces in the city are important in terms of increasing the diversity of individuals and activities in the neighbourhoods. It provides the opportunity for all people, whether children, young, adults, elderly, disabled or not, to spend time together or independently in a common area. It supports the coexistence and interaction of young and old generations. As Dannenberg, Frumkin and Jackson (2011, p.109) argue, the built environment provides the relationship of socialization by creating an environment that supplies continuity for persons to establish informal daily social interactions. Being able to establish social interaction helps to form social activities and develop social ties. Green spaces, which prepare the ground for communication



and social interactions with other individuals, strengthen the emotional well-being that makes individuals feel happier, positive and good. Social bonds formed by strong social interaction and communication support a better mental health for children, young individuals, adults, the elderly and all people regardless of social status.

Although green spaces, parks and nature provide opportunities for adults to meet, communicate and participate in organizations, they also have factors that affect their development such as playing games, doing activities, making friends and socializing for children and young individuals. In addition to these features, green spaces, which are seen as play, entertainment and activity areas for children and young individuals, learn to play games with others, communicate as well as learn to be a part of the community and the feeling of adapting to the community.

Socialization opportunities are important for the elderly as well as helping children and adults provide mental and social support. Green areas, which are planned with a design vision that not only serve as playgrounds and activity areas, but also provide easy access to elderly people and increase their mobility, offer benefits for mental health. It provides the opportunity for them to act individually and engage in activities with other people, allowing them to become happier and more confident individuals. Older people, who are in contact with other people and have social networks and neighbourhood relations, are more active, feel more energetic, and thus have better psychological and physical health. With these benefits, the planning of green areas is a point that should not be ignored in order to include elderly individuals in daily life.

#### ***4.4. Environmental Functions***

One of the other important features of urban green areas is the ecological investments to the environment, after the benefits it provide to health and healthy behaviors. Barton (2016, p.140) discusses the idea that:

*“Cities need to breathe”* (Barton, 2016, p.140).

Green spaces in a city allow to improve air quality, reduce temperatures with natural air conditioning and stabilize the CO<sub>2</sub> ratio. It increases the amount of oxygen produced, which is proportional to the number of green plants and trees, and provides cleaning of the air. Green areas containing trees provide shade, soften wind speed and

help balance the climate by reducing the urban heat effect caused by buildings, benefiting the natural climate and helping the problem of global warming. Cool air from green spaces refreshes streets and squares, thus ventilating the urban environment, as it blocks hot air rising from buildings and asphalt. In addition, the green areas and trees in the city can provide a solution to the flooding problem of rain water.

Urban green spaces, public parks have ecological benefits to protect biodiversity and help protect nature. It protects the habitats, natural structures and biodiversity of living things such as birds, insects, wild animals, flowers, plants, grass, trees. It provides a restoration task to minimize the impact of biodiversity in urban life from the pollution of the city.

Another feature of urban green spaces is that they give an aesthetic appearance to the city and the environment. Barton (2016, p.137) argues that street trees as an example give an aesthetic appearance to the urban environment and at the same time reduce air pollution, provide shade, balance urban heat effects and increase biodiversity. It provides a visual richness by combining buildings, streets, streets and urban landscape as a whole. Seeing a green landscape in the hustle and bustle of the city gives local residents a relaxing, calming feeling away from daily stress. In the urban environment, green spaces act as a buffer between the usage areas or unwanted spatiality in the city's structure. It helps to create a curtain by providing a balanced soft appearance between the city, people, buildings and spaces.

In the cities mentioned in the previous sections, breathing the polluted air caused by the crowded and busy life together with the motor vehicle transportation causes respiratory and heart diseases. Along with active mobility such as walking and cycling, a green environment contributes to reducing air pollution and contributes to the cleanliness of the breathing air.

Green spaces, which are a sustainable and healthy way to improve climatic conditions and the environment, also minimize noise pollution. In addition to preventing environmental air pollution, environmental noise caused by traffic, the number of people, industry and activities has a negative impact on people's physical health and mental state and quality of life. Environmental noise pollution also has negative effects on health such as focusing, concentration, sleep and respiratory rhythm disorders in individuals. In addition, it affects attention, focus, behavior and learning abilities, especially by affecting mental perception in children. Green areas

and trees absorb outside noise, reducing its negative impact on residents. Providing easy daily walking distance to open green areas in the city, preventing environmental pollution with air and noise conditions, at the same time; the sound of trees, leaves and birds is of great importance in terms of raising the individual's mood by relaxing citizens well-being. With these examples, the positive effects of active travel, discussed in the previous section, on the individual and the city, and its importance for health are seen again. As it seen, the features of urban green areas that are evenly distributed on the city scale have functions that increase the environmental quality.

#### ***4.5. Urban Agricultural Gardens and Therapy Gardens***

The functions of green spaces, which create an opportunity to integrate with nature, which are a part of urban planning and design, have many positive effects on human and environmental health. As stated by Croucher, Myers and Bretherton (2008, p.24), urban gardening is a method of making good use of free time as well as supporting local food production. Beyond being a food and agricultural production, urban gardens are aimed at healing and recreation by promoting a horticultural experience for people. Experiencing urban gardens, which is a way of social and ecological sustainability, acts as a mediator for increasing mental and emotional well-being by helping individuals increase the level of physical and mental vitality.

Urban gardening, which offers outdoor activities in nature, helps personal development in terms of getting away from daily stress, relaxation and comfort, self-improvement and skill abilities of the individual. Urban gardens, which should be located in urban living spaces that are easily accessible by local residents, are a natural aspect of gardening that stimulates mental well-being by breathing fresh air in the open air. According to the London (2020, p.154),

*“Whether ornamental or edible, the experience of seeing plants grow is therapeutic both in maintaining mental health and as support for those trying to recover from mental illness”* (London, 2020, p.154).

Having the quality of social contacts at the neighbourhood scale, it helps to create a sense of community that provides a sense of social integration and cooperation and to support cultural identity.

Another use of green space that increases the quality of life is the therapy

gardens where nature can be experienced in the city. Living conditions in cities such as urbanization, industry, population density, technology, dense construction and being away from the natural urban texture offer people a stressful life. Along with the longing for green, these factors, which start to distance people from nature, cause negative effects on mental health and behavior. Recently, the importance of the environment on human health has been taken into account and the concept of therapy gardens has come to the fore.

Today, therapy gardens, green areas called healing gardens, are a therapeutic method that is suitable for all people, improves the emotions and feelings of the person, and is integrated with trees, soil, plants, and nature. These gardens, which direct people to nature and establish a connection between nature and life, provide physical and psychological benefits such as vitality with a relaxing environment, improving skills, increasing physical activity, and feeling happy.

Therapy gardens positively affect the quality of public health and the physical environment, as they are designed with an attractive and aesthetic appearance, free time can be evaluated, social relations can be developed, activities such as resting, sitting, walking, watching can be done and the area is used efficiently. Therapy gardens, which provide interaction between human and nature, have gains that can be experienced in the city, such as improving collective consciousness by strengthening the ability to establish social relationships, increasing self-confidence, ensuring hand-eye coordination, stimulating the senses in individuals, concentration, productivity, observation, curiosity and creativity.

Therapy gardens, which can be seen in various settings such as rehabilitation centers, nursing homes, school gardens, hospitals, are an important concept that supports physical, mental or emotional health and well-being by offering the opportunity to connect people with nature. Dr. Roger Ulrich (1984, p.420) determines that natural visual landscapes create positive emotions and reduce stress. In the research by Professor at Texas A&M University, Dr. Roger Ulrich (Cushing and Miller, 2019, p.82), it is seen that patients with an image of seeing trees in the hospital have less recovery time and use less pain relievers. In the therapy gardens, where the green area is dominant and has a calming and pain-relieving effect, wide walking paths with easy access and circulation, promenades, different sitting areas, the use of plants and water elements provide a positive mood. Smelling a flower or soil, hearing the sound of leaves, listening to nature, watering the garden, cleaning the leaves, planting

trees, visiting small groups, establishing social connections, improving physical and mental health, are the basis of these therapy gardens, which serve the purpose of healing can be a source of motivation that increases well-being.

In this context, urban gardens and therapy gardens offer urban ecological spaces that try to preserve the links between the city, human and nature. Urban gardens and therapy gardens show how they affect the lives of individuals and communities in a positive way. More such urban gardens need to be designed in order to improve and balance the effects of modern life.

#### ***4.6. Conclusion***

Scholars emphasize bringing people closer to nature is at the center of a health and well-being-oriented approach to urban planning. Nature has a healing and restorative effect and access to it should be a priority in urban planning. Public open green spaces are the best way to integrate nature into urban areas. Public green spaces can both make cities more sustainable and improve people's quality of life. There are various physiological, mental and social benefits of urban green spaces and their integration to the built environment should be a priority for supporting public health and well-being.

## **CHAPTER 5: URBAN FORM AND WELL-BEING**

Chapter 5 discusses the effects of the physical form of the city on the well-being of urban residents. The main focus of this chapter is to explore the determinants of urban health and well-being through urban form. The urban form of a city is defined by physical characteristics that make up built-up areas, open spaces and circulation networks, and includes buildings, parks, streets, avenues, green areas, squares, neighbourhoods and etc. The physical form of the city contains and frames urban life, and in that sense, it is the link between the urban space and the experience of urban dwellers. It has a direct effect on individuals health and well-being for better or worse.

In order to design livable cities, public spaces should be included in urban design in connection with transportation connections, accessibility and social functions. In this chapter, the effects of three topics on urban health and well-being, including urban squares, mixed-land use and neighbourhood design will be discussed. The chapter explores how the physical composition of urban environments can help promote social well-being. An urban design approach that includes urban form should be evaluated within the framework of physical, mental and social needs.

Easy accessibility, availability of social interaction, sense of safety, and living in close proximity to services, these qualities are associated with the physical characteristics and composition of a city, public health and well-being. Urban squares, mixed land use and neighbourhood design, which are among the determinants of ideal urban development, answer the concrete needs of the society such as accessibility, transportation and physical activity, as well as intangible needs such as security, vitality, sense of community and identity unity. The city form is also a determinant of health in terms of supporting pedestrian mobility infrastructure, restricting car travels and encouraging social networks.

### ***5.1. Urban Form***

Conceptualizing the urban texture with community needs and urban characteristics can define a process that improves the environment and society's quality of life. Urban form can integrate the city and society with the design elements that give character to the city, such as structures, streets, avenues, parks, gardens and squares that make up the concept of the city. The built environment in the city has an order

that creates neighbourhoods with various places such as houses, workplaces, schools, service buildings, shops, pedestrian and bicycle paths, transportation networks, green areas, playgrounds.

Kevin Lynch (1981) writes about the vitality, sense, fit, access, control features of the city for a good city form in his book *A Theory of Good City Form*. The easy perception of the city is related to its being interrelated and holistic. Urban squares, green spaces and parks that establish the relationship between human and space, create vibrant and safe urban spaces, create communities, and respond to needs with mixed-use lands are the determinants of a quality city form. In this way, the city provides socialization opportunities, facilitates transportation with connected streets, supports active transportation with pedestrian and bicycle paths with designs at neighbourhood scale, and has the potential to keep the neighbourhood culture alive. All these features combine social, commercial, environmental, cultural aspects of city life, combining human and environmental interaction. Determining this combination helps to improve urban health and quality of life.

The urban form, which promotes sustainable urban life together with its spatial qualities, is also related to the quality of life of the citizens. The urban structure and its elements affect the happiness, mental and physical health and thus the well-being of the citizens. The physical structure of the city is an effective and important criterion in increasing well-being with functional, social, cultural and visual qualities for the needs of city life. Goldhagen (2017, p.44) explains that the built environment influences all aspects of life, such as physical health, mental well-being, cognitive abilities, promoting communities. Urban form and built environment have significant effects on general public health and well-being with various aspects such as providing an environment to prevent mental disorders and negative emotions, encouraging physical activity, reducing the risk of traffic accidents, reducing air and noise pollution, comfortable access to local services, creating safety and aesthetic appearance. This part of the study discusses the role of urban form in promoting mental and physical health and the overall life quality of citizens. At this point, how the physical structure contributes to public health and well-being is discussed under three headings. These are urban squares, mixed-use lands, and street and neighbourhood connections.

## ***5.2. City Squares***

Urban squares are one of the most important elements that should be focused on while assessing the relationship between urban form and well-being. The areas where urban life is most intense, active and functional are public spaces. Urban squares, on the other hand, are the most effective public spaces as an important part of urban and social life from the point of view of public space. The report by Office of the Victorian Government Architect (2019, p.49) explains that active urban squares with good design are “the heart of a city”. Squares are places that unite the society from past to present, provide the opportunity to rest in the intensity of city life, where daily experiences take place, where people communicate and meet with each other (Figure 18).

City squares reflect the social and cultural interaction between the city and people in daily life. Squares that reflect the life style of the city and society are democratic public spaces where the requirements of public life such as uniting the society, maintaining traditional and cultural values, giving the city an identity, meeting physical and social needs, and comfortable accessibility are realized. Squares enables the people to establish a connection with their physical environment and help them maintain a balance between their sense of self and the society.

According to London (2020, p.91) a well-designed public space with a strong identity to it attracts people of all ages and cultures because it offers a variety and different of experiences. The quality of public city squares is determined by the extent to which the society allows to be included in life. City squares are spaces that provide the opportunity to be both individual and together, and have differences and similarities. The squares, which offer access to all age groups, perspectives and status differences, and offer specific usage areas for daily activities, are a common sharing place for the whole society. It should be an area where the individual can be together with people who have a different life from himself, where there are no spatial boundaries, accessible to all groups of the society, democratic and providing equality for all individuals. City squares also have cultural value. Squares have an egalitarian multifunctional identity that provides social, cultural and artistic awareness with common events, activities and entertainments such as concerts, theaters, national holidays, ceremonies, exhibitions and festivals. It prepares the base for communicating, being together, and thus gaining a sense of urban society and urban identity.



City squares are areas of activity and socialization. Throughout history, squares have always been a place for citizens to come together. City squares contribute to the maintenance of a good quality of life, as they provide people opportunities for spending time either on their own or through interaction with others. Squares are places where individuals spend time in open areas, breathe fresh air and benefit from sunlight. It helps the individual to get away from the feeling of stress and anger, relax and reduce physical fatigue. In this regard, city squares, which have a pedestrian-oriented design, are also important in terms of allowing people to travel comfortably and safely.

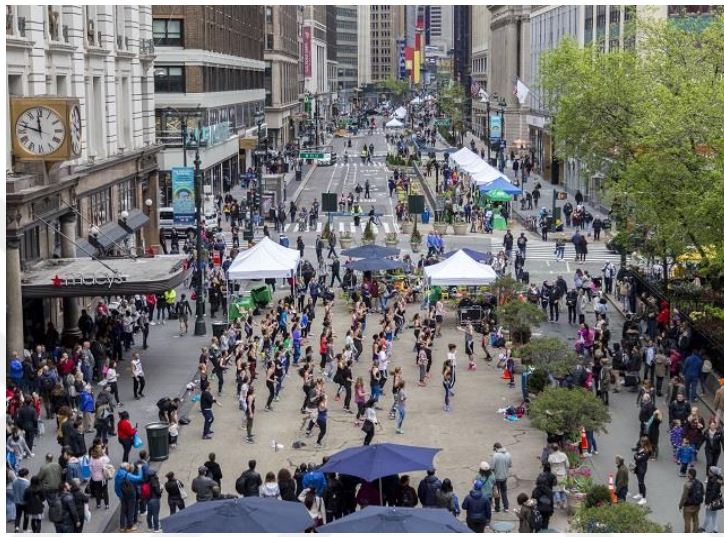


Figure 18. City Square (Source: thecityfix.com, 2017)

City squares are places where citizens share their ideas and cultural skills by experiencing that place and become a part of the city as a result of their interaction. Places that provide social communication and development, where individuals perform their daily actions such as meeting, chatting, resting, watching, sitting within the framework of social life. This situation offers a healthier life socially. At the same time, it is important for the locals of the city to communicate with each other and exchange ideas and emotions, in terms of reducing the feeling of isolation and depression and improving mental health.

When city squares are compared with green areas and public parks, it can be said that they create additional recreational opportunities, particularly of a social nature. When city squares also incorporate green spaces, then provide public open spaces for physical activity, sports and spending time in nature. It is seen that physical activity levels are higher when residents have easy access to urban parks. Mobility and exercise done during the day have physical benefits such as weight control, increasing muscle strength, and mental benefits such as reducing stress and feeling good.

According to Rogers (2017, p.23) the design of public spaces reflects the shared culture and social structure of that place, and the variety and vitality of a city's public space is equivalent with the wealth and equality of the local community. The fact that city squares include facilities such as parks, playgrounds for children, walking and cycling paths, and sports fields increases the diversity of users and functions. Areas preferred by more users offer a lively environment. Individuals feel safer in public places with urban vitality than in desolate places with few people. In addition, the squares designed with physical activity opportunities for all age groups ensure that the society can be included equally.

### ***5.3 Neighbourhoods with mixed land use***

The increase in population in cities has made the town and city center denser. The fact that basic needs are located around the city center has enabled the development of social and commercial needs such as housing, workplace, school, shops, local services around the city. Sinnett et. al. (2011, p.32) state that mixed land use offers more destinations for services and local facilities within walking distance, which turns out to be a very important criterion for designing pedestrian-friendly neighbourhoods. The settlement pattern is based on a balanced solution of the physical distribution among the needs of the population, the transportation system, the availability of local services, and the recreation areas in order to improve the living conditions. Considering that the settlement style affects the quality of life and health, it is important to find mixed-use lands such as well-designed green parks, squares, children's playgrounds, recreation and entertainment areas that encourage physical activity, housing, workplaces, public facilities and easy access to social services (Figure 19).

Mixed-use land patterns are an important complement to a good urban form. The mixed land use functionality, which provides spatial diversity with five key elements of urban form, is a well-designed urban planning criteria with

*“green space, movement, works/services, housing and density”* (Barton, 2016, p.181).

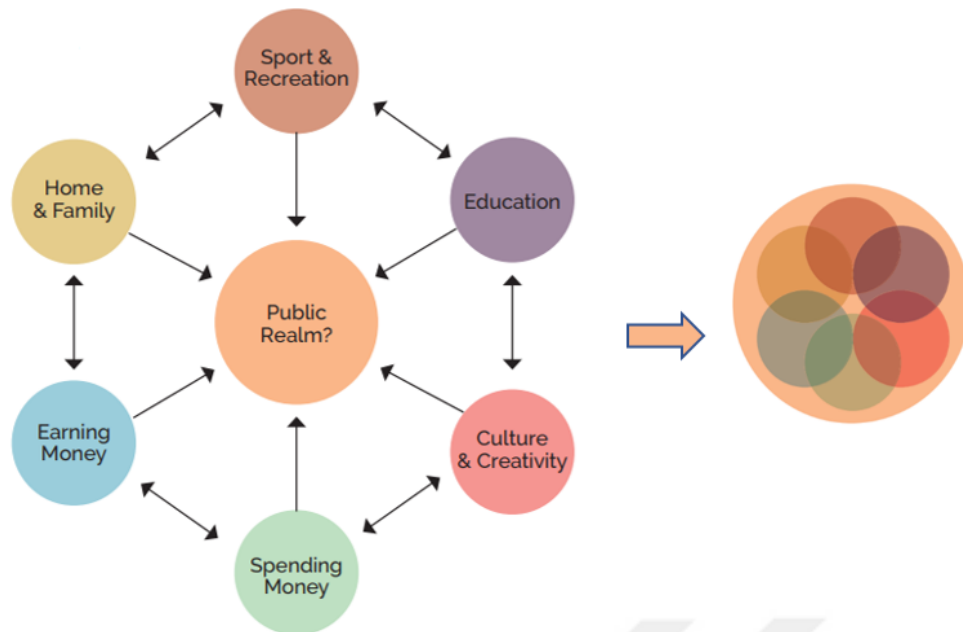


Figure 19. Diagram of Mixed Land Use (Source: London, 2020, p.65)

The settlement pattern should support a combination of uses and include public spaces that provide convenient access within walking and cycling distance to facilities necessary for daily needs. High-density mixed-use plans combine residential, workplace, commercial, public and social facilities in the same place, supporting pedestrian transportation with green infrastructure, public spaces and various functional uses. Destinations such as local shops and restaurants are within walking or cycling distance in areas with land use diversity. Providing safe and healthy transportation choices that encourage pedestrian mobility in high-density and mixed-use urban areas increases accessibility and recreation opportunities. Mixed-use areas affect urban health and quality of life in many ways. Thanks to mixed-use lands, public health is associated with street connections, public spaces, parks, squares, density of local facilities through physical activity. As emphasized in a research by The Royal Town Planning Institute (2018, p.32) high density and mixed land use areas encourage pedestrian mobility and accessibility and support physical activity. Increasing physical activity helps improve mental health, reduces inactivity and alleviates the level of chronic diseases associated with a sedentary lifestyle.

When urban areas have low density and a design that does not support active transportation, it promotes unhealthy lifestyles by promoting long travels and driving, increased motor vehicle use and risk of traffic accidents, physical inactivity, carbon emissions, less social interaction and all related ignoring opportunities for better health. In addition, long distance and car travel in low-density areas also has a negative

impact on mental health as it promotes passive transportation. Low-density urban forms can negatively affect mental health by increasing access distance and duration as well as encouraging passive modes of transportation (Royal Town Planning Institute, 2018, p.36). The increase in distances increases the use of motor vehicles, which causes an increase in the time spent in traffic and noise, at the same time it is associated with stress due to the feeling of not being able to reach a place on individuals. This situation, inserts personal well-being at risk. Mixed-use lands facilitate reach to local facilities and services compared to places where access is difficult, creating equal access, especially for the elderly, pregnant women, children and the disabled. Some cities take the compact city model as an example in terms of sustainability and accessibility. A good example of this idea, the Twenty Minute Neighbourhood Local Connectivity Plan Melbourne, Australia has an urban planning approach that shifts the focus of city design from motor vehicles to pedestrian mobility. In their Melbourne 2017-2050 Plan, the State of Victoria Government (2022) defines 20-minute neighbourhood planning as “living locally.” Plan Melbourne aims to provide the opportunity to reach various daily needs safely within walking or cycling distance of home in a short time with its dense and mixed function with a land use-enhancing focus. It includes equal access to local facilities and services such as education, workplaces, open spaces, parks and shopping centers for all citizens.

ARUP (2016, p.119) defines urban density according to the suitability of the distance between areas with mixed functions to walking distance. Promoting walkable neighbourhoods with the use of high-density and mixed-function space creates local spaces. Local restaurants, shops and stores provide opportunities for citizens to interact during the day and create social bonds with other people that strengthen community life. Based on a research conducted in Ireland, Sinnott, Williams and Chatterjee (2011, p.14) note that citizens living in walkable and mixed-use neighbourhoods provide at least 80% more social capital, such as getting to know their neighbours, a sense of trust, community interaction, than less walkable neighbourhoods. Communicating with other people improves social relationships and positively affects mental health. At the same time, since mixed-use lands incorporate many services, facilities and employment, the distance between the spaces is less and the density of people is higher. This situation affects increasing participation in mixed uses and the perception of community security. The person who interacts and communicates socially feels more safety because of belonging and participating in community life.

Mixed land use is central to the Compact City Model. The well-being of city residents is directly linked to social contacts, social equity, accessibility and livability as a whole, with an urban form characterized by high-density mixed land use patterns. The compact city model is a powerful approach to healthy and sustainable settlement and is a planning approach model that encourages high mixed use with short distance access. Being compact and having mixed use, it is also sustainable in terms of less car dependency and energy consumption, lower emissions, good air quality, increased walkability, urban vitality.

In summary, providing accessibility with high diversity and short distances plays an important role in meeting the needs of the society in the city. Mixed-use lands are one of the community priority planning principles as a combination of various functions of the city. The urban structure, which is based on pedestrian mobility on a human scale in the settlement form, can help create a healthy society by offering different functions and vitality. Mixed-use planning positively affects not only the physical well-being of society, but also their mental and social well-being. Increasing functionality and diversity in dense and mixed-use urban centers that offer spatial development with a quality structure emphasizes better results in the context of urban life quality.

#### ***5.4. Local Connections that Provide Street Connectivity and Neighbourhood Design***

Local connections established between urban areas, which have the quality of public life in cities, have an important place for society. Street networks and neighbourhood design provide a local connection between the city and people. These connections support social infrastructure and accessibility while connecting public spaces. A well-designed neighbourhood can be characterized by a network of buildings, employment, education, parks and open spaces for recreation, and public service facilities, local shops, and a network of streets that offer an easy access structure. In that, street networks and neighbourhood design, which are local connections, are highly interrelated.

Examining the urban texture at the street and neighbourhood scale is important in terms of public health and community well-being. Neighbourhoods, which are an important part of urban life, express the integrity of the environment focused on human and public life. Streets are social spaces where a common life is shared. Street patterns that support active transportation and street networks designed at human scale can be

accepted as the basis of neighbourhood planning. Neighbourhoods are social and cultural living spaces that include daily life experiences in community life (Figure 20). A neighbourhood planning that does not distract people from street life supports with a qualified environmental scheme and integrity as a result of the interconnected design of the streets that provide active mobility services at the most local level.

Dannenbergh, Frumkin and Jackson (2011, p.109) note that walkable, pedestrian oriented and safe neighbourhoods with parks, squares and public spaces offer chances for health enhancing social interaction. Streets that provide local transportation networks have an important point in neighbourhood design for public safety, easy access and social capital, and pedestrian-oriented design should be given priority in order to do this effectively. Unlike an automobile-centered neighbourhood life, a neighbourhood design that allows all local citizens to travel within short walking distance should have a self-contained system with a structure that can provide easy access to various daily needs, public spaces, community facilities. The presence of connected streets in the neighbourhood fabric, the fact that it has components that offer diversity and mixed use to the community such as pedestrian and bicycle paths, sitting areas, green areas, parks, social and cultural facilities, commercial spaces emphasize the connection between neighbourhood design and well-being. The diverse social spaces and mixed-use areas mentioned in the previous topic, such as schools, parks, restaurants, and shops provide local focus points that encourage pedestrian mobility. These focal points have a unifying effect on the community.

Traffic noise, congestion and risk of accidents, which are frequently encountered in daily life in the city, affect the mental health of the individual negatively. Neighbourhoods and streets promoting active mobility prevent the risks prevented by the automobile, while also having factors to improve physical health. Neighbourhood design with a connected street network that prioritizes pedestrian mobility plays a role in promoting physical activity. The safe and easy use of walking and cycling ensures that residents of all ages are physically active. When neighbourhoods allow short distance access to public spaces with walking and cycling paths, they contribute to both physical and mental health by meeting the daily exercise needs of the locals.



Figure 20. Neighbourhood Design (Source: Barton, 2016, p.100).

Moreover, the perception of social security brought by common life is a social effect that affects mental capital in neighbourhood design. The safety of neighbourhoods is related to the diversity and quality of public spaces, and this affects the way people are called to the streets. According to the concept of "eyes on the street", which Jacobs (1961, p.35) discussed in her book *The Death and Life of Great American Cities*, the eyes of the citizens on the street refer to more people. Thus, the increase in the number of people encourages the use of the street by pedestrians, creates safer areas and instills a sense of security in people. Fewer eyes on the street refer to less safe urban areas. The increase in human density contributes to the feeling of safety and the reduction of emotions such as fear and insecurity that impair mental health, because the presence of other people makes that place safer. Streets, city squares and mixed-function public spaces, neighbourhoods become a lively place as they offer many opportunities for participation during the day. Considering that walking and cycling increase social communication, we could argue that it would also help one develop stronger bonds with one's neighbours. Neighbourhoods that help maximize well-being with their spatial qualities influence a sense of belonging to the community linked to reduced crime and higher happiness.

The neighbourhood caters to more than the daily needs of the community and the ease of transportation. Neighbourhood identity plays an important role in the socialization and development of urban society. Approaching neighbourhood identity with a community-centered design, focusing on the basic features of the physical environment such as spatial quality, access and social interaction ensure that social and physical infrastructure are connected. From the perspective of daily life, urban residents identify themselves with their neighbourhoods. London (2020, p.115) notes

that neighbourhood destinations have a social structure and inclusiveness that brings people together, enables them to connect with others, expands networks and increases community cohesion. Neighbourhood design enables the person to belong to a place and to form a sense of belonging, unity, togetherness and community where they learn to live with other people. In addition, the adoption of a common lifestyle the basis for communication and interaction among people, growing neighbourhood networks and togetherness relations at the local level, so it has a design composition to meet social needs of health. Neighbourhoods where social relations are strengthened through communication and sharing, bring together citizens with various status, provides social connections and social integration. This situation, which the built environment provides to the social well-being of the society, is very effective in creating a strong neighbourhood identity and increasing loyalty and vitality.

### ***5.5. Conclusion***

In conclusion, the chapter shows the health and well-being benefits of an urban community-focused approach to urban squares, mixed land use and neighbourhoods that help build local connections. This chapter argued that urban squares, mixed land uses and neighbourhood design are crucial factors in improving the living standards of urban dwellers. These three criteria which are a common space for all people, contribute to bringing the society to a livable form both individually and collectively, as well as preserving the continuity of urban living spaces.



## CHAPTER 6: CONCLUSION

This thesis argued that the built environment is related to public health and can cause or help remedy many health problems. Moreover, it has an important role in improving the quality of life. The important focus of the thesis is to consider public health as a broader concept that includes overall well-being. In addition to being physically healthy, well-being is understood as including mental, psychological and social dimensions of health. The thesis argues that promoting public health, well-being, happiness and quality of life in cities should be at the center of urban planning. The study reveals the context, relationship and processes of the impact of urban design and planning on well-being for a healthy society. It focuses on key urban planning criteria with a human-centered approach that helps integrate livability and health into urban areas by examining urban design and planning from a local scale framework.

Duhl and Sanchez (WHO, 1999, p.8) argue that the physical and social environment in cities has an impact on public health and that city planning contributes to preventing health problems and improving health. A well-designed city is an important determinant of health and well-being. It is stated that the characteristics of urban environments are remarkable, going beyond the contagious diseases caused by 19th century sanitation and inadequate cleaning. Chronic diseases such as obesity, diabetes, asthma, heart diseases, increasing mental illness caused by unhealthy lifestyles, which are considered today's health problems, and concerns in the built environment such as air pollution and noise pollution endanger public health and well-being. Today, health-promoting green spaces, sunlight, fresh air, walking paths, social connections and physical activity are basis for physical, mental and social health, in addition to not limiting human health and its associated well-being with epidemic diseases. When evaluated within the framework of healthy urban design, basic qualities and functions in environmental planning and spatial development, such as easy access to local facilities and services, contact with nature, recreational areas, safe streets and neighborhoods that encourage physical activity associated to feeling better and satisfaction with life are the key features of both physical, mental and social well-being. Tsouros (1995, p.133) defines for healthy living places in The WHO Healthy Cities Project, beyond achieving a certain level of health competence, the city is being aware of health and directing it towards development. In this context, the concept of

public health has been replaced by the concept of urban well-being, which evaluates the aspects of physical, mental and social well-being, positive emotions and happiness from a wider perspective. The concept of well-being has a complementary life framework that includes establishing relationships with the external environment, facilitating daily life, physical and mental well-being, positive emotions, happiness, social and cultural relations. Providing equal access to physical, mental, spiritual and social needs of citizens of all statuses and ages is a fundamental priority and an urgent need for long-term public health and quality of life. From this point of view, as Tran (2016, p.13) states, the design stages of cities and urban spaces, which are seen as important determinants of public health, need to be broadly understood.

To this end, Chapter 1 discussed the place and importance of urban planning in the fight against crowded, unhealthy living conditions and epidemic diseases from a historical background for public health in industrial cities. Then, Chapter 2 looked at pedestrian mobility, which balances physical and mental health in modern planning, taking into account the health concerns caused by an automobile-oriented sedentary lifestyle. The 15-minute city model, Copenhagen and Amsterdam Bicycle Cities included in this section, are examples of effective active transportation-oriented planning in urban planning that enable active participation in life and communication with the physical environment. Chapter 3 assessed the importance of accessing public green spaces and connecting with nature in raising the of quality of life in cities. The chapter concluded that access to nature improves physiological health by promoting physical activity, improves sleep quality, reduces feelings of stress and depression by allowing social interaction, provides mental relaxation and increases environmental quality by offering fresh air. And finally, Chapter 4 approached well-being from a different angle; it argued that the morphology of cities may contribute to social well-being.

The importance of urban design on public health and quality of life in today's urban life is similarly seen in the Covid-19 pandemic process. Problems that affect the quality of life of citizens such as the difficulty of accessing local places, staying away from public open spaces and parks, social isolation, which cities face during the pandemic process, highlight the importance of planning and development of urban spaces by gaining importance in the approach to public health and well-being in urban life. As Rice discusses (2020, p.1), the Covid-19 pandemic has created major changes to existing daily routines as new and different patterns of behavior. The Covid-19

pandemic reminded us that public health should be at the center of urban design and planning.

In light of this, the study provides an overview of a basic understanding of the connection of public health and urban planning, and illustrates planning criteria that may help achieve well-being. The chapters discussed are determinants of urban design and planning that significantly impact public health and well-being. It is accepted that there are intersections between the three areas of walkability, urban green spaces, urban form, and they are interconnected with one another in the broader definition of well-being. A planning with walkability makes it possible to access nature and public green spaces and serves the public well-being together. Likewise, while walkability does not make much sense in terms of ensuring the well-being of people on its own, it contributes to well-being through a design supported by a compact and mixed-used urban form. All chapters show that the connection between the built environment and well-being has an integrated composition, not only related to physical factors, but also to social and environmental characteristics such as pedestrian mobility, physical activity, inclusion of nature in the city, equal access to basic needs, social capital and harmony.

According to the study findings, the thesis reveals the role played by urban planning for more livable, healthy, quality well-designed cities in improving community health and well-being. In this respect, it is effective to provide a conceptual framework for integrating health and well-being issues into urban planning practices. The results obtained in the study accept the idea that the connections between public health and well-being in terms of the quality and functionality of urban spaces in the urban planning process should be discussed more widely.

In the process of designing healthy cities, it is possible to see the contributions of these design principles in the context of current and future urban planning and development. In general, it can be concluded that the design methods that should be discussed in order to integrate public health, quality of life and well-being into urban design and planning practices provide a complementary framework and perspective.

## REFERENCES

- Barton, H. (2016). *City of Well-being: A radical guide to planning*. 1st edition. London: Routledge.
- Barton, H., Thompson, S., Burgess, S., and Grant, M. (2015). *The Routledge handbook of planning for health and well-being: Shaping a sustainable and healthy future*. 1st edition. London: Routledge.
- Ballester J. E., (March, 2020). *Urban Green Spaces Are Our Most Effective Tool to Improve Urban Life*. Basic Infrastructure & Housing, Green & Smart Development, Urban Health, Ecosystems in Cities, healthy cities, Spain. Urbanet. Available at: <https://www.urbanet.info/urban-green-spaces-improve-urban-life/> (Accessed: 5 May, 2021)
- Berto R. (2014). *The Role of Nature in Coping with Psycho-Physiological Stress: A Literature Review on Restorativeness*. Behavioral Sciences, Vol.4(4), pp.394–409.
- Campbell, M. (2005). *What Tuberculosis did for Modernism: The Influence of a Curative Environment on Modernist Design and Architecture*. Medical History, Vol. 49(04), pp.463–488.
- Calman K. (1998). *The 1848 Public Health Act and its relevance to improving public health in England now*. BMJ, Clinical research edition. Vol. 317(7158), pp.596–598.
- Clariss, S., Scopelliti, D. and ARUP (2016). *Cities Alive: Towards a walking world*. Arup's Foresight + Research + Innovation, Transport Consulting and Urban Design teams. [Online]. London W1T 4BQ. Available at: <https://www.arup.com/perspectives/cities-alive-towards-a-walking-world> (Accessed: 1 June, 2022)
- Corkery, L. (2015) 'Beyond the park: Linking urban greenspace, human well-being and environmental health', in Barton, H., Thompson, S., Burgess, S. and Grant M. (eds) *The Routledge handbook of planning for health and well-being*. London: Routledge, pp. 239–253
- Cushing D.F. and Miller E. (2020). *Creating Great Places: Evidence-based Urban Design for Health and Well-being* (1st ed.). United States of America: Routledge.
- Cromwell P. (2013). *Designing For The Social Experience Of Bicycling*. [Online]. Available at: <https://gehlpeople.com/blog/designing-for-the-social-experience-of-bicycling/> (Accessed: 8 June, 2022)

Dannenberg A. L., Frumkin H., and Jackson R. (2011). *Making healthy places: designing and building for health, well-being, and sustainability*. Washington, D.C.: Island Press.

Davies N., Cornes C. and Sherriff G. (May 11, 2020). How major cities are trying to keep people walking and cycling? The Conversation. [Online]. Available at: <https://theconversation.com/uk/search?q=How+major+cities+are+trying+to+keep+people+walking+and+cycling> (Accessed: 1 March, 2022)

Duhl L.J., Sanchez A.K. and World Health Organization (1999). *Healthy Cities and the city planning process: a background document on links between health and urban planning*. Copenhagen: WHO Regional Office for Europe.

Gehl J. (2010). *Cities for People*. Washington D.C.: Island Press.

Giles-Corti B., Foster S., Koohsari M., Francis J. and Hooper P. (2015) ‘The influence of urban design and planning on physical activity’, in H. Barton, S. Thompson, S. Burgess, and M. Grant (eds) *The Routledge handbook of planning for health and well-being*. London: Routledge, pp. 121-135

Goldhagen S. W. (2017). *Welcome to your world: how the built environment shapes our lives*. 1st edition. New York, NY: Harper, an imprint of HarperCollinsPublishers.

Franken E. (20 December 2020), *The 15-minute city*. [Online]. Available at: <https://innovationorigins.com/the-city-in-fifteen-minutes/> (Accessed 29 June, 2021)

Hancock T. and Duhl L. (1988). *Promoting Health in the Urban Context*. WHO Healthy Cities Papers No:1. WHO Regional Office for Europe, Copenhagen, Denmark: FADL Publishers.

Howard E. (1898). *To-morrow: a peaceful path to reform*. London: Swann Sonnenschein.

Jacobs J. (1961). *The Death and Life of Great American Cities*. New York, NY: Vintage Book; Reissue edition.

Jennings, V., Johnson Gaither, C., and Gragg, R. S. (2012). *Promoting Environmental Justice Through Urban Green Space Access: A Synopsis*. Environmental Justice, Vol. 5(1), pp.1–7.

Kaplan S. (1995). “*The Restorative Benefits of Nature: Toward an Integrative Framework*.” *Journal of Environmental Psychology* Vol.15(3), pp.169–182.

LeBrasseur R. (2020). Parks matter more than ever during a time of sickness – something Frederick Law Olmsted understood in the 19th century. Cnn Style. Available at: <https://theconversation.com/parks-matter-more-than-ever-during-a->

time-of-sickness-something-frederick-law-olmsted-understood-in-the-19th-century-137882 (Accessed: 2 May, 2022)

Lehman M. and Boyle M. (2007). *Healthy & Walkable Communities*. Institute for Public Administration College of Human Services, Education & Public Policy University of Delaware.

London F. (2020). *Healthy Placemaking-Well-being Through Urban Design*. 1st Edition. London: RIBA Publishing.

Loureiro A. and Veloso S., (2017). 'Green Exercise, Health and Well-Being', in Fleury-Bahi G., Pol E., O. Navarro O. *Handbook of Environmental Psychology and Quality of Life Research*. International Handbooks of Quality-of-Life, pp.149-169.

Luscher D. (2020). *Introducing the 15-Minute City Project*. 15minutecity. [Online]. Available at: <https://www.15minutecity.com/blog/hello> (Accessed: 5 July, 2021)

Lynch, K., (1981). *A Theory of Good City Form*. Cambridge: MIT Press.

Office of the Victorian Government Architect, (2019). *The case for good design - A guide for government*. Melbourne. Available at: <https://www.ovga.vic.gov.au/sites/default/files/2019-12/Urban-Design-OVGA-Case-for-good-design.pdf>

Mahdjoubi L. and Spencer B. (2015) 'Healthy Play For All Ages In Public Open Spaces' in Barton H., Thompson S., Burgess S., and Grant M.(eds) *The Routledge handbook of planning for health and well-being*. London: Routledge, pp.136-149

Martin E. K. and Wood J. L. (2014). ' "We Live Here Too". . .What Makes a Child-Friendly Neighborhood?', in Cooper R., Burton E., & Cooper C. L. *Well-being: A Complete Reference Guide, Volume II, Well-being and the Environment*. 1st edition. West Sussex, UK: Wiley-Blackwell, pp.147-184.

Martínez L., and Short J.R. (2021). The Pandemic City: Urban Issues in the Time of COVID-19. *Sustainability* 2021, MDPI, Vol. 13(6), pp.1-10, 3295.

Maumi C. (2020). *Landscape architecture according to Olmsted: beyond purifying the air, pacifying the mind*. Cure and Care. *Docomomo Journal* (62), pp. 28–35.

Morley I. (2007). *City Chaos, Contagion, Chadwick, and Social Justice*. The Yale journal of biology and medicine. Vol. 80(2)., pp.61-72.

Nordenson S. C., (2016). *The Miasmist: George E. Waring, Jr. And The Evolution Of Modern Public Health*. Salt Lake City, Utah: CELA. Landscape Research Record No.5. pp.116-127. [Online]. Available at: <https://thecela.org/wp-content/uploads/SEAVITT-NORDENSON.pdf> (Accessed: 20 July, 2022)

- Pineo H. and Rydin Y. (2018). *Cities, health and well-being*. the Royal Institution of Chartered Surveyors (RICS): London, UK. [rics.org/insight](https://www.rics.org/insight). [Online]. Available at: <https://www.rics.org/globalassets/rics-website/media/knowledge/research/insights/cities-health-and-well-being-rics.pdf> (Accessed: 22 July, 2022)
- Public Health Advisory Committee. (2008). *Review on Healthy Urban Planning*. Report to Minister of Health on Healthy Urban Planning. [Online]. Available at: [https://www.moh.govt.nz/notebook/nbbooks.nsf/0/6224D99BFEC84ACC257911000C4D90/\\$file/review-urban-planning08.pdf](https://www.moh.govt.nz/notebook/nbbooks.nsf/0/6224D99BFEC84ACC257911000C4D90/$file/review-urban-planning08.pdf) (Accessed: 10 February, 2021)
- Rafiemanzelat, R., Emadi, M. I., and Kamali, A. J. (2017). *City sustainability: the influence of walkability on built environments*. Transportation Research Procedia, Vol.24, pp.97–104.
- Rice L. (2020). *After Covid-19: urban design as spatial medicine*. URBAN DESIGN International, pp.1-6.
- Rogers B. (2017). ‘*In defence of the realm: 10 principles for public space*’, in Brown R., Hanna K. and Holdsworth R., *Making good –shaping places for people*. Centre for London. pp. 23-29. Available at: [https://www.centreforlondon.org/wp-content/uploads/2017/02/CFLJ5081\\_collection\\_essay\\_placemaking\\_0217\\_WEB.pdf](https://www.centreforlondon.org/wp-content/uploads/2017/02/CFLJ5081_collection_essay_placemaking_0217_WEB.pdf) (Accessed: 12 July, 2021)
- Sallis J.F., Millstein R.A. and Carlson J. (2011). ‘Community Design for Physical Activity’, in Dannenberg A., Frumkin H., Jackson R., (Eds). *Making Healthy Places: Designing and Building for Health, Well-Being, and Sustainability*. Island Press: Washington, DC, USA, 2011. pp.33-49
- Sinnet D., Williams K. Chatterjee K. and Cavill N. (2011) *Making the case for investment in the walking environment: A review of the evidence*. UWE. Technical Report. London: Living Streets. [Online]. Available at: <https://www.livingstreets.org.uk/media/1394/2011-making-the-case-full-report.pdf>
- Souter-Brown, G. (2014). *Landscape and Urban Design for Health and Well-Being: Using Healing, Sensory and Therapeutic Gardens*. 1st ed. Routledge.
- Sullivan W., (2014). ‘Well-being and Green Spaces in Cities’, in Cooper R., Burton E., and Cooper C. L. *Well-being: A Complete Reference Guide, Well-being and the Environment*. 1st edition. West Sussex, UK: Wiley-Blackwell, Vol. 2, pp.421-443.
- The Royal Town Planning Institute (RTPI), (2018). *Settlement Patterns, Urban Form and Sustainability: An Evidence Review*.

<https://www.rtpi.org.uk/media/3460/settlementpatternsurbanformsustainability2018.pdf>

The State of Victoria Department of Environment, Land, Water and Planning, (May, 2022). *20-minute neighbourhoods: Create more inclusive, vibrant and healthy neighbourhoods*. Available at: <https://www.planning.vic.gov.au/policy-and-strategy/planning-for-melbourne/plan-melbourne/20-minute-neighbourhoods>

Tran M.C. (2016). *Healthy cities — walkability as a component of health-promoting urban planning and design*. Journal of Sustainable Urbanization, Planning and Progress, vol.1(1), pp.11–21. 10.18063/JSUPP.2016.01.006.

Tsouros A. D. (1995). *The WHO Healthy Cities Project: state of the art and future plans*. Health Promotion International, Vol. 10(2), pp.133–141. Oxford University Press.

Tugac Ç. (2020). *The Historical Pandemics and the COVID-19 Pandemic from the Perspective of Urban Sustainability and Urban Resilience*. e. Van Yüzüncü Yıl University the Journal of Social Sciences Institute, Outbreak Diseases Special Issue, pp. 259-292.

Ulrich R. (1984) *View through a window may influence recovery from surgery*. Science, Vol. 224(4647), pp.420–421.

Warsh M. (2020). *How Public Health Influenced the Creation, Purpose, and Design of Central Park*. Central Park Conservancy. RNA House History Club. [Online]. Available at: <https://www.centralparknyc.org/articles/how-public-health-influenced-the-creation-purpose-and-design-of-central-park> (Accessed: 1 February, 2022)

Warsh M. (2020). *‘A Sense of Enlarged Freedom’: Central Park as Sanctuary*. Central Park Conservancy. [Online]. Available at: <https://www.centralparknyc.org/articles/central-park-as-sanctuary> (Accessed: 20 July, 2022)

World Health Organization. (2010). *Global Recommendations on Physical Activity for Health*. World Health Organization. Geneva, Switzerland: WHO Press.

World Health Organization (2010). *Urban planning, environment and health: from evidence to policy action*. Meeting report. WHO Regional Office for Europe. [Online]. Available at: [https://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0004/114448/E93987.pdf](https://www.euro.who.int/__data/assets/pdf_file/0004/114448/E93987.pdf) (Accessed: 10 March, 2021)

World Health Organization (2014). *Basic documents, 48th ed*. World Health



Organization Including amendments adopted up to 31 December 2014. . Geneva, Switzerland: WHO Press. [Online] Available at: [https://apps.who.int/iris/bitstream/handle/10665/151605/9789241650489\\_eng.pdf?sequence=1&isAllowed=y](https://apps.who.int/iris/bitstream/handle/10665/151605/9789241650489_eng.pdf?sequence=1&isAllowed=y) (Accessed: 4 May, 2022)

