

Building healthy cities in the global south: A case study of the City of
Lahore, Pakistan

by

Maha Safwan

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be electronically available to the public.

Abstract

Building healthy urban communities is one of the most important challenges countries around the world are facing. The industrial revolution and current technological advancements have resulted in the rapid urbanization of human settlements. Over time, these urban centres are deteriorating, increasing related urban health issues particularly in the low- and middle-income countries of the global south.

Now, the world is experiencing the fastest urban growth in human history while cities in the global south are urbanizing faster than those in the global north (which are already predominantly urbanized). Explicit consideration of urban health is often ignored in urban planning practice, especially in the global south. Through urban design guidelines and policy initiatives, municipal planning becomes a tool with the potential to guide and promote health-friendly built environments.

This research uses the conceptual framework developed by Giles-Corti and colleagues (2016) as the foundation for understanding how urban, built environments and transportation attributes affect health. It examines how policy and design in municipal plans can be useful tools in fostering active transportation as well as accessible health services, education and public spaces. This thesis begins by highlighting the differences between urban health issues in the global north and the global south. It then describes the qualitative method and document analysis used to identify urban health issues in the case study City of Lahore, Pakistan. It also provides recommendations on how Lahore can undertake actions to improve health by identifying the barriers to and facilitators of urban health. The study reached saturation after 10 urban planners from the public and private sectors were interviewed.

The findings of this study indicate that Lahore's land use plan implicitly considers health in its policies while the transportation sector plan provides some explicit policies that promote a healthy urban environment. Despite this, both plans are missing strategies on how to implement these policies. Results from key informant interviews reveal similar findings regarding the current urban environment and the master plan's capacity to facilitate a healthy built environment. Informants emphasize that the barriers to implementing healthy urban planning are predominantly the lack of political will and funding. This research provides a basis for future studies on Pakistan's process for developing a master plan that results in a healthy city.

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List of Abbreviations

GDP: Gross Domestic Product

HDI: Human Development Index

HIA: Health Impact Assessment

IMPL: Integrated Master Plan

JICA: Japan International Cooperation Agency

LDA: Lahore Development Authority

LUTMP: Lahore Urban Transportation Master Plan

NCDs: Non-communicable Diseases

NESPAK: National Engineering Services Pakistan (Pvt.) Ltd.

NGO: Non-governmental Organization

NRM: National Reference Manual

NTRC: National Transport Research Centre

TEPA: Traffic Engineering and Transport Planning Agency

UNDP: United Nations Development Programme

UU: Urban Unit

WHO: World Health Organization

WAPDA: Water and Power Development Authority

WASA: Water and Sanitation Agency

1. Introduction and Overview

Because humans interact with their surrounding environment, public health and the built environment are directly correlated (Perdue et al., 2003) and this association has existed for centuries (Williams & Wright, 2007). With growing interest in concepts of healthy urban planning, governments, international organizations and public health practitioners have developed many recommendations/policies to improve public health through policy agendas (Williams, 2013). The literature shows that the majority of such policies and recommendations are implemented in high-income/developed countries (Rydin et al., 2012; Kenzer, 2000).

Today, more people live in cities due to urbanization, “the biggest social change” in history (Werna et al., 2013). Urbanization can concentrate poverty, which results in insufficient food, unsafe working and living conditions, poor water and sanitation facilities, disease, traffic congestion, environmental deterioration and less-secure neighborhoods (Werna et al., 2013). The World Health Organization (WHO)’s Healthy Cities programme is a public health approach to building healthy living and environmental conditions that promote health.

The major factors improving health in countries of the global north during the 19th and 20th centuries were not medical advancements and technology; they were certain economic, environmental and social changes (WHO, 1995). In particular, the World Health Organization’s Healthy Cities movement focuses on the connection between living conditions and public health (Kenzer, 2000).

This thesis aims to examine how the Healthy Cities initiative (i.e. the WHO programme) has been adopted in the global south, using Lahore, Pakistan, as a case study. The focus of the study is on the distinction between planning in the global south versus that in the global north, using Healthy Cities principles as the measure of planning and Lahore as a case study site. The study will help to develop recommendations for city planners in the City of Lahore.

The term “public health” used in this thesis broadly includes not just physical health but the social, economic, political and spiritual health of an urban population (Kenzer, 2000). Thus, the thesis includes the following three parts (plus conclusions): The first part describes Giles-Corti and colleague’s eight urban system policies as a theoretical framework, reviews the literature/studies focusing on the basic principles adopted throughout the world for healthy urban

environments, and summarizes key findings from the global north versus those from the global south. The second part of the thesis analyzes official plans to highlight the extent to which the master planning process for the City of Lahore, Pakistan, aligns with the WHO Healthy City principles and strategies. Part three identifies the barriers to and facilitators of the adoption of these healthy city policies in the City of Lahore using data from one-on-one qualitative interviews. The thesis conclusion summarizes the findings and situates them within the context of the existing literature.

1.1. Rationale for the Study

Planning urban environments to improve health outcomes is an urgent priority that was recognized by the WHO in their declaration of 2010, designating it the Year of Urban Health (Rydin et al., 2012). There is a growing global awareness concerning poor urban health outcomes attributed to built environments, but there is a lack of evidence of effective interventions (Herrick, 2014), especially in the global south. According to McAndrews and Marcus (2014), community health issues cannot be solved with only health care and surveillance planning; solutions also depend on determinants that are social, economic and environmental in nature. Moreover, healthy cities must include healthy urban planning practices. Public health should be analyzed as part of the urban planning process.

With growing interest in the concepts of healthy urban planning, local and national governments, and international organizations such as the WHO, have developed many recommendations/policies to improve public health by providing healthy city guidelines. These guidelines are based on the principle of health for all and a better-quality life assessed through community need. As the global south rapidly urbanizes, the burden of chronic disease is also increasing. Consequently, there is urgent need for more research in the global south context to improve the health of cities in the low- to middle-income regions of the world (Eckert & Kohler, 2014).

Giles-Corti et al. (2016) identified eight urban and transportation planning policy systems that have direct and indirect effects on health and wellbeing (Figure 1, below): housing, transportation, education, safety, design, recreation, social and health services, and employment. These eight urban policy systems are important components of any official master plan and all have direct and indirect impacts on public health.

According to Giles-Corti (2016), urban planners traditionally focussed on the physical, environmental, social and economic aspects of communities. In the 21st century, however, it is also important to understand the urban and transportation planning and design decision impacts on people's health.

Due to a very different environmental, political, economic and social context, the global south cannot simply replicate Healthy Cities projects implemented in the global north. Nevertheless, the global south can take some common themes from the global north to improve the health and wellbeing of urban residents (Mufamadi, 2015). For example, walking and bicycling are important for a healthy lifestyle, but there is a difference in bicycle usage in the global south and the global north. People in the global south use bicycles predominantly because of their inability to buy a car, whereas in the global north bicycles are frequently chosen as part of a healthy lifestyle. Some common themes such as incorporating healthy urban design, tree planting and preservation as well as efficient public transportation would benefit the health of all global residents, even if the actual practice of healthy planning differs between the global north and global south.

Therefore, the objective/aim of this thesis is to understand the barriers to and facilitators of the adoption of healthy city policies in the global south, and to highlight healthy urban planning differences within the context of the global north versus the global south. The City of Lahore is used as an illustrative case study because Lahore is in Pakistan—a global south country—and it is currently working on preparing a new master plan for the City. This is a study of how the WHO's Healthy Cities programme has been adopted in the global south City of Lahore—a case study that will help in preparing recommendations for city planners.

1.2. Theoretical Framework and Research Questions

A theoretical framework is a collection of interrelated concepts, that function like a theory. Psychosocial models are widely used in health research, and interventions based on such models tend to be more effective than theoretical interventions (John et al., 2007). This thesis is based on two psychosocial models. First, the socio-ecological framework of human behaviour describes the collaborative characteristics of people and environments that determine health outcomes and has long been recommended for guiding the practice of public health (Golden & Earp, 2012). The socio-ecological model places importance on multiple levels of behavioural influencers such as the community and public policy as well as social environments (Glanz,

n.d.). The ecological model is used to conceptualize the determinants of decision makers' understanding of the concept of a healthy city.

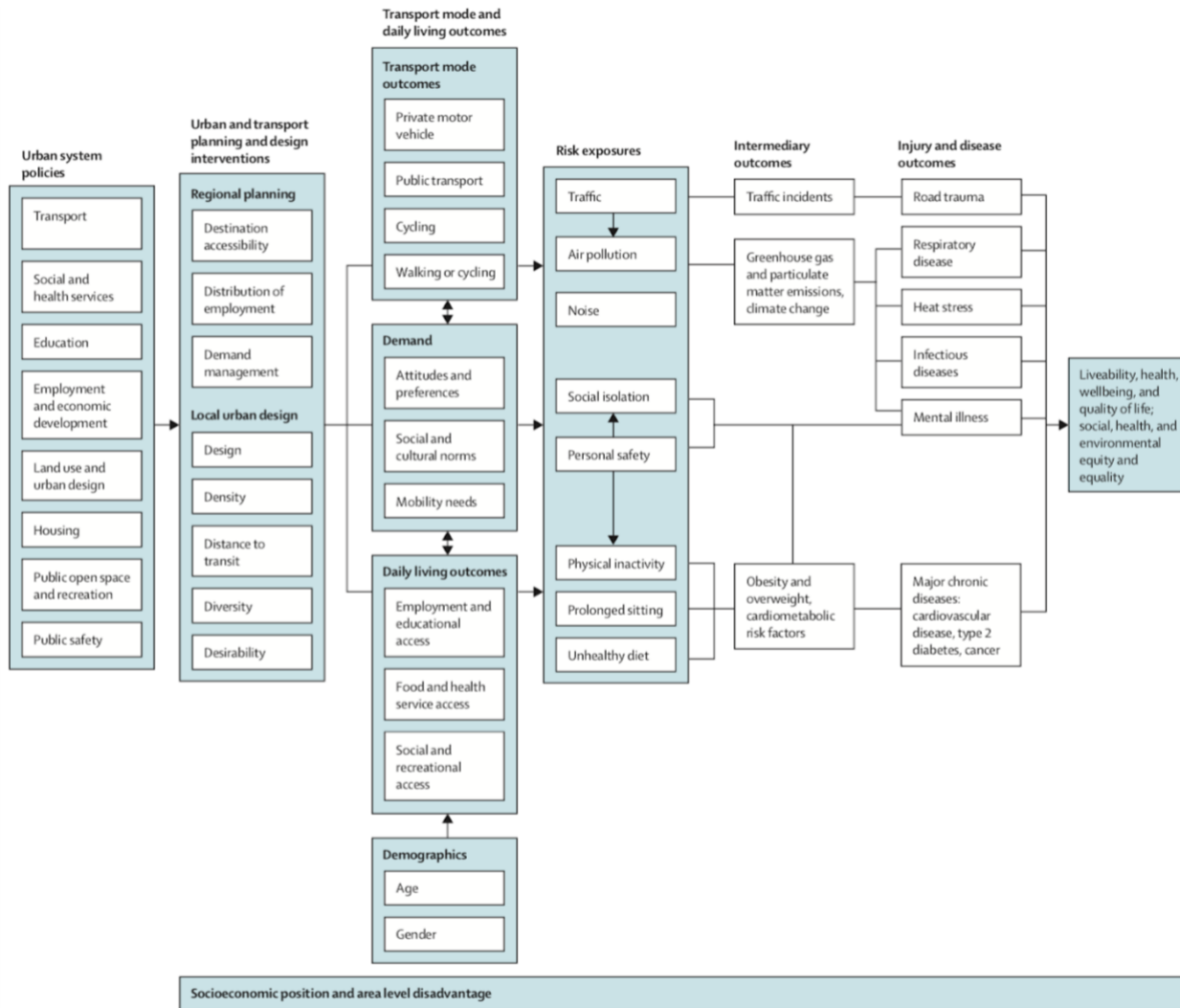


Figure 1 Urban strategies

Source: City planning and population health: A global challenge (Giles-Corti et al., 2016)

Second, this study considers a socio-cultural approach (Vygotsky, 1980), which consists of the dimensions of influence concerning physical environments and socio-cultural contexts (McLaren & Hawe, 2005). As mentioned, public health depends in part on healthy urban environments. The literature shows that the majority of such policies and recommendations are implemented in the global north with less implementation within the global south. In the global south, where such efforts do exist, they are often based on guidelines adopted from the global

north (Kenzer, 2000). However, it is important to embed an understanding of the culture in regard to global health to help devise effective health strategies (Edberg, 2013). Here, culture is defined as the common system, which is adaptive and continually changing. Culture helps individuals interpret their experiences (McMullin, 2017). Culture is affected by, and affects, the social context of the area.

Therefore, this research also considers the socio-cultural context. The socio-cultural context in this study includes social functions such as community structures and cultural practices encompassing daily routines, transportation choices, living styles, etc., which play an important role in determining the health of the community. The term “socio-cultural context” is used here interchangeably with the term “socio-cultural environment,” which is an important part of the socio-ecological model (Caperon et al., 2019).

The research is based on Giles-Corti and colleague’s (2016) model of urban strategies, which will be used to examine strategies to improve urban health in the global south, and using the City of Lahore, Pakistan, as a case study.

This thesis answers the following research questions:

1. In the published literature, to what extent do healthy city recommendations vary in the context of global north versus global south?
2. To what extent and how does the City of Lahore include health as a consideration in its existing municipal policies and plans?
3. What are the barriers to and facilitators of the adoption of healthy city policies in the City of Lahore?

Countries in the global south are the subject of only limited research that can help make their cities healthier through urban planning policies. The socio-cultural environment in the global north is different from that of the global south due to differences in community income and education levels. Moreover, solutions proposed for the global north cannot automatically be transferred to the global south. The planning theory approach is based on the idea of policy transfer, not policy mobility. Proposed by Eugene J. McCann, in 2011, the approach developed focusses on policy transfer, i.e. taking policies implemented in the global north and applying them directly to the global south—an outdated concept. Instead, the current focus is on *policy mobility*, i.e. how to mobilize a policy used in the global north and adapt it to a global south context. Chapter 2 of the thesis explains this further.

1.3. Aim and Objectives

The aim of this study is to explore how the WHO's Healthy Cities programme has been adopted in the global south, using Lahore for a case study. It focusses on distinct differences in the approach to planning between the global north and the global south using healthy cities as a measure of planning and Lahore as a case study site. The objectives of this study are three-fold:

1. To identify the published literature that characterizes healthy urban communities to understand urban attributes that contribute to improved public health, and to specifically examine whether healthy city recommendations differ by context: global north vs. global south;
2. To examine the extent to which the City of Lahore, Pakistan, considers health and determinants of health in its existing policies and plans;
3. To explore key stakeholder perspectives on the barriers to and facilitators of healthy city policies being adopted in the City of Lahore.

1.4. Structure of Thesis

The thesis comprises six chapters:

Chapter 1 is an introduction to and overview of the topic and research questions, research objectives, theoretical framework and study context.

Chapter 2 presents a literature overview of the healthy city concept, the urban attributes that contribute to healthy cities, the WHO's Healthy Cities model, a comparison of healthy cities in the context of global south versus global north as well as key findings and conclusions in the literature on how to make cities in the global south healthy.

Chapter 3 describes the research methods used, research approach and limitations of the research.

Chapter 4 presents a content analysis of Lahore's existing plans and policies, and it answers the second research question. This chapter explains if and how Lahore's different policies mention health. The urban policy systems, developed by Giles-Corti et al. (2016), are identified and analyzed. This chapter also presents findings from qualitative interviews with Lahore's public and private planners about barriers to and facilitators of including health considerations in city planning processes and policies.

Chapter 5 discusses the key findings and results.

Chapter 6 provides overall recommendations, conclusions, limitations, and recommendations for future directions.

2. Literature Review: Healthy urban planning- global south versus global north

2.1. Introduction

During the 19th century, the emerging concepts of urban planning and public health resulted from common goals, i.e. to prevent infectious diseases (Corburn, 2004) and to reduce the harmful effects of industrialization (Melosi, 2000). In the past several decades, urban planners and public health practitioners have increasingly recognized the importance of the relationship between environments and health (Institute of Medicine, 2001). Urban planning and its relationship to health were recognized by the WHO in its Healthy Cities concept (1948), which challenged the traditional notion that health is the responsibility of health practitioners only and highlighted the idea that health is a concern in the context of many national and local policies (Barton & Grant, 2011).

It is important to note that the Healthy Cities project began in Europe (1948). Its goal was to integrate prior public health initiatives in order to improve environmental hygiene conditions by building good infrastructure and basic utilities to reduce disease burden. This idea was taken up by several countries around the globe and the concept was integrated into city planning to improve the quality of life in cities and towns. A healthy city project can be a stand-alone initiative or can be integrated into other city development projects to avoid further investments (Thakur et al., 2007), especially for cities in the global south. Should the role of urban planning also be to create a well-functioning neighborhood or a beautiful environment? Is it done for sustainability or economic development? Or, is it used to reduce our ecological footprint and increase the quality of life for people? To some extent, urban planning is a combination of all these things and its essence can be found in the WHO's Healthy Cities programme. The WHO healthy city concept combines health, humans and planning to achieve a sustainable future (Barton & Grant, 2011).

This research focusses on the relationship between public health and urban planning in rapidly urbanizing areas, especially because—according to the WHO (2019)—by 2050, almost 70% of the global population will live in urban areas. The WHO identifies urbanization as one of the key challenges to population health. With rapid and often unplanned urbanization, a

combination of poverty, increased population density, and infrastructure burden can have negative effects that create conditions such as decreased quality of life and increased burden of disease (Global Risk Report, 2015).

Up to 2016, most of the top-ten causes of death were directly or indirectly influenced by poor urban design and planning policies (WHO, 2019). For instance, heart attacks, respiratory diseases, and lung cancers can result from air pollution, which is caused by traffic, waste, cooking, and power production. Similarly, diabetes is linked to obesity and less physical activity, which is influenced by car dependency and a lack of walking and bicycling paths. Poor sanitation and water lead to diarrheal diseases, and traffic injuries are partly due to the lack of a safe and efficient public transportation system.

This research seeks to understand the extent to which differences exist in the characteristics of healthy cities among cities in the global north and the global south. The following literature synthesis explores the basic understanding and concepts of urban attributes that contribute to public health, from the healthy city movement's origin in the global north to the development of a healthy city movement in the global south.

2.2. Overview of existing evidence: Association of public health with urban planning/built environment

Urban areas represent diverse environments in which people live and encompass a range of human experiences (Galea & Vlahov, 2005). Built environments in urban areas are the “planned and structured aspects of our surroundings” that include buildings, transportation and recreational areas (Williams, 2013).

The supposition that the urban environment is an important determinant of health is not new (Otgaar et al., 2016). Many urban planners accept that their development practices and policies can have an impact on community health (Pilkington, Grant & Orme, 2008). While urban planning and public health considerations emerged from the same health concerns caused by industrialization in the 19th century, the connection between built environments and public health was less apparent by the mid-20th century (Perdue, Stone & Gostin, 2003).

The proliferation of urban sprawl resulted in a more suburban, car dependent, sedentary lifestyle, all of which have negative impacts on health (Frumkin et al., 2004). Cities experience

these health inequalities both between and within city boundaries. For instance, low-income city neighborhoods have a less-healthy quality of life (Otgaar et al., 2016).

In the global north, there has been a growing recognition that the built environment has a vital influence on the healthiness and well-being of people. The built environment is linked to health through a variety of pathways such as the design, planning and quality of neighborhoods, green spaces and streets (Pilkington, Grant & Orme, 2008).

By 2030, nearly 52 million global deaths will be caused by chronic disease each year (Urban Land Institute, 2013). The increased prevalence worldwide of chronic diseases such as cancer, and obesity-related diseases such as heart attack, stroke and diabetes, should be of chief concern for both planners and health practitioners (Booth et al., 2001); understanding the connection between health and the built environment can pave the way to sustainability and healthy cities globally.

The research community has shown increased interest in determining the relationships between the environment and health to improve living standards and reduce the burden of chronic disease (Prasad et al., 2016; Giles-Corti et al., 2016). In other words, the built environment is considered a significant part of or the key to the public health crisis faced by contemporary society (Kent, 2011; Booth et al., 2001; Giles-Corti et al., 2016; Luis Schwab et al., 2015). Many options exist that can modify and improve the approaches used to design buildings and develop communities, and infrastructure services to improve urban health.

Features of the built environment promoting walkability and active transportation reduce the effects of chronic diseases (Le Beau, 2017; Prasad et al., 2016; Morris & Crawford, 1958; Luis Schwab et al., 2015; Pilkington, Grant & Orme, n.d.; Galea & Vlahov, 2005). Chronic conditions such as heart disease, cancer, and lung disease are the reason for two-thirds of the deaths worldwide each year, partly due to inactive lifestyles, low-quality infrastructure, and poor community design. Thus, city planning is recognized as part of a comprehensive solution for tackling the adverse outcomes a built environment can have on urban health (Giles-Corti et al., 2016). With this change, prospects are developing that will alter techniques and methods urban planners use to design and build communities (McMicheal, 2000).

2.3. Urban attributes that contribute to public health

The healthy city toolkit developed by the British Columbia Centre for Disease Control (2018) includes information about cities that can be made healthy through attributes such as neighborhood design, transportation networks, environments, food systems and housing, all of which enhance the social and economic well-being of the community. The toolkit suggests that healthy planning can be integrated into the site-specific bylaws of a city-wide plan or regional-level strategies. It describes *complete* communities as those that are compact, physically active, have mixed uses, preserve their environment, and increase equitable access to healthy food options.

Giles-Corti et al. (2016) define the eight urban policy systems that most strongly influence health. The WHO also recognizes the same urban attributes, which are summarized below:

- a. **Social and Health Services:** Nearly 1 billion people in the world live in slums (WHO, 2016). It has been estimated that one third of the urban population in the global south have lack of access to water and sanitation infrastructure, especially in slums and squatter settlements where low- and middle-income people reside (Global Report on Human Settlements, ed. 2010). Poor water quality and sanitation lead to an increase in diseases and contribute to about 10% of the global disease burden (Mara et al., 2010). Health services should be sufficient to deal with increased population needs despite the social status of people, as a fundamental right of every human being (WHO, 2017). Improved sanitation and water positively impact social and economic development, especially in the global south (Mara et al., 2010).
- b. **Housing:** The WHO's approach to housing and health is that housing is more than shelter, it means to have a home and privacy and it should contribute to the well-being and support the development and social integration (Bonney, 2007). The WHO, in 2018, prepared recommendations for healthy housing aimed at informing housing policies and regulations at the national, regional and provincial levels, and requiring inter-sectoral collaboration. It is essential that housing must protect people from the effects of severe weather by providing proper heating and cooling, good indoor air quality, resilience to natural hazards, and freedom from pest infestation (Ompad et al., 2007; WHO, 2018). Urban building codes that require increased

- insulation, greater energy efficiency and good ventilation improve indoor temperature, prevent the development of mould and damp as well as the accumulation of indoor air pollution (WHO, 2016).
- c. Public Safety:** A well-managed city is one where people feel safe, included and respected (WHO-WPR, 2015). The desire to create safe places has been on the urban planner's agenda for decades (Duhl & Sanchez, 1999). According to Cohen (1993), if a community does not have satisfactory health services, schools, libraries, recreational facilities or access to food and parks, the community loses a major buffer against violence. There is a need to build neighborhoods that nurture pride, respect and sociability and that safeguard accessibility to amenities (Crowhurst-Lennard & Lennard, 1987).
 - d. Transport:** The rapid increase in urbanization causes cities to become overcrowded, with more cars on the roads, which leads to pollution (WHO, 2019). It is important to tackle land and air pollution resulting from transportation and traffic congestion at the city level (Rydin et al., 2012). It is also necessary to have a road-traffic system that is efficient, provides safer and shorter routes, helps reduce traffic accidents, provides safe walking and bicycling routes, and promotes active mobility through safe modes of travel (Traffic Injury Prevention, 2017).
 - e. Land Use and Urban Design:** Urban planners can transform the conditions in which people live thereby encouraging them to adopt healthy lifestyles (WHO-Europe, 2019). This shows that land use and urban design can contribute to a healthy-living environment. The major factors affecting Non-communicable Diseases (NCDs) are directly influenced by urban design, and urban environment and planning policies (WHO, 2016).
 - f. Public Open Spaces and Recreation:** Public open spaces also play a vital role in creating healthy urban environments. Creating green spaces helps control intense climate issues in rapidly urbanizing cities and reduces urban heat islands. Estimates indicate that physical inactivity—connected to poor walkability and lack of access to recreational areas—accounts for 3.3% of global deaths (WHO, 2019).

- g. Education:** A healthy city includes schools and universities, libraries and cultural centres. Transit to these places should also be accessible through strategies and designs that encourage diversity and desirability (Rydin et al., 2012).
- h. Employment and Economic Development:** The political and economic environments of a city are key elements that influence urban governance and employment (WHO, 2019). Along with other factors described above, economic development (especially equitable economic development) within cities also improves health (Rydin et al., 2012). If employment is distributed according to demand management and accessibility, the city prospers financially (Rydin et al., 2012). Similarly, citizens, elected leaders, policy makers, decision makers, and members of different organizations and businesses who work together provide beneficial feedback for the development and implementation of a healthy environment (WHO, 2016; D’Onofrio & Trusiani, 2018). Working with senior levels of government, other municipal departments, religious organizations, private donors, and the non- governmental organization (NGO) sector to transform and improve circumstances in poor areas of cities is an important role for health-oriented local political leadership (Tulchinsky & Varavikova, 2014).

2.3.1. Summary of urban attributes

Public health is influenced by decisions about the built environment (Rebecchi et al., 2019). Public health can be improved through effective environmental, social, economic and cultural decisions made by local planning and implementing authorities (Tulchinsky & Varavikova, 2014).

At its most fundamental, a city is deemed unhealthy if it cannot provide the basic necessities of life: shelter, sanitation, water, safety and security, and economic opportunity (Ashton & Thurston, 2015). There is a relationship between the socio-economic context of neighborhoods and health outcomes concerning diseases (Diez-Roux, 2001).

The characteristics of healthy cities are shaped by environmental, political, social, and economic forces and policies (WHO, 2019), and refer largely to population, income and physical growth along with other measures such as education, safety and housing (WHO, 2016). A healthy city supports health, safety, accessibility and mobility, and includes homes, buildings,

streets, open spaces and infrastructure that provide recreation, commerce and facilities for physical activities such as jogging, bicycling, etc. (Tulchinsky & Varavikova, 2014).

2.4. Need for healthy cities in low- to middle-income countries

People in low- to middle-income countries of the global south are migrating from rural to urban areas, both within their own countries and to higher-income countries. However, of major concern to people from low- to middle-income countries are the basic necessities of life such as food, water, sewage, housing and jobs (Duhl & Sanchez, 1999). This migration has created cities in the global south with slums and squatter settlements and has increased the rich-poor divide. Hence, community issues are complex and call for multidimensional solutions (Duhl & Sanchez, 1999).

It is important that urban planners—and other decision makers who are serious about creating supportive, sustainable and diverse urban environments—critically examine the basic concepts of public health (Peterson, 1996) and support policies that encompass health concerns such that the inadvertent consequences of present and future policies must be measured (Duhl & Sanchez, 1999). The Healthy Cities approach and guidelines provide this opportunity (Tsourous, 1990; Price, 1996).

2.5. City plans: important documents to promote healthy built environments

Almost half (49%) of the cities in the world have established urban development and environmental plans to guide urban development (UN, 2001). City plans anticipate the future using current trends, scenario analysis and stakeholder engagement, which ultimately help predict future urbanization patterns (Meltzer, 2013). According to Rydin et al. (2012), interventions such as improving urban policies, building standards, air and housing quality, and water and sanitation management in urban environments require complex thinking and result in better public health.

Planning policies that influence built environments include those related to building codes, zoning regulations, and subdivision and transportation infrastructure projects (Angotti & Hanhardt, 2001; Filion et al., 2004). Master/official plans are developed to meet basic public health needs for projected growth in urban populations; these include access to safe water, sanitation, basic utility facilities, efficient and affordable transportation, and shelter and good air quality (Siegel, 2018). These master/official plans deal with issues such as the location of

housing, commercial uses, industry and infrastructure services involving roads, water and sewer, institutions such as schools, and open spaces. They also deal with growth projections and related community-betterment projects and strategies. Healthy urban policies included in the master/official plan can encourage active transportation modes such as safe bicycle lanes, improved public transit and sidewalk design as well as mixed use and compact development, and the provision of recreation areas. This can be done through policies that support access to healthy food and environments, and access to schools and retail areas via bicycling, walking and public transit, thus improving the quality of life (Beck, 2010).

Without appropriate plans, city decisions are far less effective or efficient. There should be proper milestones and guidelines (Haven, 2017) that anticipate future events such as the impact of transportation policies, provisions for parks and open spaces, and improved quality of life. For instance, these goals can be met through healthy city planning practices within various urban policy systems such as the promotion of active transportation, affordable housing with proper ventilation, access to safe drinking water and sanitary services, and access to public toilet facilities in schools and colleges.

Collecting information about past trends and current issues is a prerequisite for sustainable urban planning (Qureshi et al., n.d.). To analyze information on current issues, urban planners need secondary data from various sources. This data is not easily accessible in many developing countries (Edralin, 1986). Therefore, urban planners in developing countries often spend their resources on data collection, which decreases the time and resources available for policy formulation (Arbeit, 1993) and can also result in the duplication of data (Qureshi et al., n.d.).

2.6. WHO Healthy Cities movement at a glance

By 2050, 70% of the world's people will live in cities. Globally, only 12% of cities reach pollution control targets. With these trends in mind, the World Health Organization identifies urbanization as one of the key challenges to public health in the 21st century (WHO, 2019).

In the nineteenth century, when cities in Europe and North America confronted epidemic diseases that ravaged undernourished populations living in poor housing and environmental conditions, they responded to this challenge and created the foundations of a movement that spread throughout the world. The Health of Towns movement in Britain (established in 1844),

led by Edwin Chadwick, is the direct precursor of the WHO Healthy Cities movement (Kramer, 1942).

The World Health Organization (WHO) was established in 1948 as a special branch of the United Nations (UN). The aim of the WHO was to deal with health and disease issues of concern in the late 20th century (Clift, 2013). The WHO Healthy Cities Project (1988) is a well-known example of the setting-based approach to health promotion (Plumer, Kennedy & Trojan, 2010). Developed as a framework for translating key principles of the Ottawa Charter for Health Promotion (1986) into practice, it is best characterized as a process for successfully encouraging healthy public policy (Plumer, Kennedy & Trojan, 2010).

The primary goal of the Healthy Cities movement is to support cities in implementing policies and plans based on Health for All (WHO, 1999) and Agenda 21 (UN, 1992). According to the WHO, health promotion is seen as a mediating process enabling people to increase control over and improve their health. (WHO, 1984; Kickbusch, 1985). At present, the WHO has 194 Member States and 139 sub-offices across 28 countries, divided into 6 regions: African Region (78), South-East Asia Region (9), Eastern Mediterranean Region (36), Region of the Americas (9), European Region (5), and Western Pacific Region (2) (WHO, 2017).

According to the WHO, a healthy city should be clean, secure, sustainable, healthy and physically active (Edwards & Tsouros, 2008). A healthy city is 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” (WHO, 1998).

Strategies adopted by cities to become a healthy city include community-based initiatives along with needs assessment, mobilization and institutionalization. The WHO has developed an understanding of health that relates to all codes of healthy city planning. These principles are intended to provide an outline to direct those involved in the planning, designing and development of cities. Though these are proposed as general guiding principles, they are vital for progress in making and sustaining healthy cities. The principles, set out by the WHO Healthy Cities Project (1995 & 1997), are as follows:

- ❖ **Equity:** All individuals must have the right and the opportunity to recognise their complete health potential.

- ❖ **Health promotion:** An urban health plan should encourage health strategies by using codes outlined in the Ottawa Charter for Health Promotion, specifically, to build healthy public policy; create supportive environments; strengthen community action and develop personal skills; and reorient health services.
- ❖ **Inter-sectoral action:** Health results from the settings of everyday life and is influenced by the actions and decisions of most community sectors.
- ❖ **Community participation:** Motivated communities are key components for setting priorities and making and executing decisions.
- ❖ **Supportive environments:** A city's urban health plan should include designs for supportive physical and social environments and consist of issues such as ecology and sustainability as well as social networks, transportation, housing and related environmental concerns.
- ❖ **Accountability:** Decision makers have an impact on the conditions that influence health; accountability for such decisions should be made obvious so that they can be measured and assessed over time.
- ❖ **The right to peace:** Peace is a fundamental prerequisite for health and the attainment of peace is a justifiable aim for those who are seeking to achieve the maximum state of health for their community and its citizens (Duhl & Sanchez, 1999).

The Healthy Cities project involves inter-sectoral collaboration through the formulation of a “City Health Plan” that identifies the interrelation between living conditions in urban areas and the health of residents (Green et al., 2003). A healthy city plan may be a stand-alone project in a given city or the health component of an urban development effort that involves urban infrastructure, land-use management, municipal finance, industrial development, etc., when the city health plan is an integral part of a city's wider development plan (Price & Tsouros, 1996).

In Europe, 94% of healthy city movement member cities agreed to a partnership between organizations and 76% of them implemented collaborative plans, projects or programs with greater cross-sector involvement (Rydin et al., 2012). City health profiles, city health development plans, and a healthy-ageing profile were common—health-effect assessments were less so. According to the WHO, two thirds of healthy city coordinators were “actively involved with urban planners and influential in shaping planning programs” (Rydin et al., 2012).

The eleven qualities described below have been translated by healthy cities into an enormous range of actions, themes and interventions (de Leeuw, 2011).

1. A clean, safe, high-quality environment (including adequate and affordable housing);
2. A stable ecosystem;
3. A strong, mutually supportive and non-exploitive community;
4. Much public participation in and control over decisions affecting life, health and well-being;
5. The provision of basic needs (food, water, shelter, income, safety, work) for all people;
6. Access to a wide range of experiences and resources, with the possibility of multiple contacts, interactions and communication;
7. A diverse, vital and innovative economy;
8. Encouragement of connections with the past, with varied cultural and biological heritage, and with other groups and individuals;
9. A city form (design) that is compatible with and enhances the preceding features of behavior;
10. An optimum level of appropriate public health and care services accessible to all;
11. High health status (high positive health status and low disease status).

Source: Hancock & Duhl, 1988

In the global north, the first city to adopt these principles was Toronto, in 1984. In a convergence of global and local developments, the city celebrated emergent health-promotion approaches by the WHO and a decade of innovation in Canadian health policy. Japan also has had a long-standing relationship with the Healthy Cities movement, with Tokyo taking an early lead in the 1980s. It is estimated that there are close to 10,000 Healthy Cities worldwide; the smallest is l'Isle Aux Grues (Canada) and the largest is metropolitan Shanghai (China) (De Leeuw, Duhl & O'Neill, 2010).

2.7. WHO Healthy Cities and urban planning

There is no doubt about it—urban planning has an impact on a community’s health. A healthy environment is a very important determinant of health. For instance, physical activity is directly influenced by the built environment, which affects decreasing or increasing obesity and other health epidemics (Hruby & Hu, 2016). These problems are increasingly emerging in the global south (Bhursoy & Jeewon, 2014).

Currently, major concerns are related to population health, the impacts of transportation, and the quality of housing and land use planning. These concerns are directly related to sustainability and scarce resources, which also impact humans. The WHO, in 1980, identified the urban environment as the key area for future policy development in Healthy Cities projects. Now, this is recognized as one of the crucial actions taken by Healthy Cities program participants, confirming urban planning’s unique and important role in making cities healthy places.

The WHO (1991) defines a healthy city as follows: A Healthy City is not one that has achieved a particular health status. Rather, a Healthy City is conscious of health and striving to improve it. It continually creates and improves its physical and social environments and expands community resources that enable people to mutually support each other in performing all the functions of life and developing to their maximum potential. This definition places emphasis on the inclusion of health concerns in policies that are not conventionally related to health (such as land use, urban planning, mobility, transportation, etc.) (Sebastian, 2020).

2.8. Concept of the global south and global north

The term “global south” is complex and dynamic in nature. It emerged around 2000 (Kalb & Steur, 2015) and the United Nations now organizes its statistical data in accordance with use of the term (Andrea et al., 2015). The *global north* and *global south* classifications are based on the United Nations Development Programme (UNDPs) Human Development Index (HDI). It designates 64 countries with high HDI as the global north and the remaining 133 countries as the global south (Thomas, n.d.).

Mignolo (2011) defines “global south” as a currently used, fashionable expression. The term “global south” generally refers to the regions of Asia, Africa, Oceania and Latin America. It is also synonymous with terms such as “third world,” “low-income,” and “developing” (Dados & Connell, 2012).

The term “global south” is not perfect, yet it is considered more favourable than its predecessors (Andrea et al., 2015). Because these are mostly politically weak countries (Dados & Connell, 2012), this new term highlights the political associations inherent in the concept of the global south concept, dividing the world into the northern and southern hemispheres. In 1980, the Brandt Line was conceived by Willy Brandt (Clarke, 2018). It shows the difference between the global north and the global south: the less-developed countries have a Gross Domestic Product (GDP) per capita of less than US\$10,700. Thus, it is an imaginary line showing income inequality (Bibby, 2018).

Today, circumstances are more complex today because of recent significant social and economic developments in the global south. For example, while entire countries are often classified as global north or global south, many analysts now refer to rich and poor *communities* found within countries of the global north and global south (RGS, n.d.) and recognize that there are some similarities between individual cities (Caison & Vormann, 2014). Some argue, therefore, that the global north and global south should not be a the division based on location relative to the equator, but instead should be based on globalization or global capitalization, with special consideration given to whether these factors empower the disadvantaged parts of the world (Andrea et al., 2015). The global south and global north can also be considered in terms of those who are victims of or benefit from global capitalism (Tom, 2005).

2.9. Urban planning in the global south versus the global north

According to the United Nations Department of Economic and Social Affairs (2016), the fastest growing cities of the world are located in Asia and Africa (global south). Urban planning throughout the world reflects the increasing gap between current urban policies and approaches and the growing issues of inequality, informality, increased urbanization, poverty and spatial fragmentation. This is not limited to only the cities of the global south (Watson, 2009). The dichotomy between the global south and global north is not a fiction but a fact that plays a very important role (Odeh, 2010). Given that, in the past, the global north shaped planning theories and practices, it is important to fundamentally review planning practices to determine whether they are applicable to the rapidly growing cities of the global south (Watson, 2009).

Watson (2009) argues that urban planning systems in the global south have been inherited from colonial governments (e.g. Pakistan) or adopted from a global north context to suit particular political and ideological ends (Onodugo & Ezeadichie, 2019). Consequently,

planning systems in many parts of the global south are inadequate but are still in practice for master planning, zoning and a vision of urban modernism. This is the case for Pakistan and India, where ordinances and acts introduced during the British era are still applicable, all of which exhibit the issues that caused countries of the global north to move away from these planning practices. This older form of planning includes a top-down approach with rigid plans and land-use controls. Most of the planning and building standards in the global south are unsuited to helping the poor (Devas, 2001).

Sanyal (1990) argues that low-income countries usually waste their policy-making process as the result of incorrect analysis and recommendations and emphasizes that low-income countries should in different parts of the world should share among themselves what they learn from their experiences but not compare themselves to rich countries. As rural areas become urbanized, low-income households in countries of the global south such as Pakistan need to secure land that is affordable (Qadeer, 2004), yet urban sprawl also leads to the continual increase in slums and squatter settlements (Watson, 2009).

In the global north, contemporary planning has evolved through bottom-up approaches that include welfare policies, and with slower rates of urban growth and changes that can be predicted and managed. Urban planners—mainly in the global south, but not only there—receive pressure from governing bodies that are driven by the notion of modernism, which does not support survival efforts of the urban poor but actually hinders them with strict regulations that create more room for informal and illegal settlements. Therefore, it is important to highlight planning issues related to the global south (Watson, 2009). Rana (2009) also argues that goal-based sustainable-city discourse on the global north is misleading and inappropriate for sustainable urban development in cities of the global south.

Much planning theory to date has been produced by scholars located in the global north. Over the last decade or so, a new set of planning ideas has emerged, primarily from theorists working in, or interested in, the global south (Watson, 2016). It is important to note that planning processes in the global north that could be easily adapted to sustainable urban development are not easily adaptable in the global south for several economic and social reasons because planning varies from country to country according to their development levels, socio-economic conditions, and legal and administrative characteristics (Yazar & Dede, 2012).

2.10. Burden of diseases in the global south

Demographers project that the global urban population will increase from under 4 billion people (out of 7.5+ billion) in 2018 to 6.9 billion (out of 9.8 billion) by 2050 (Siegel, 2018). Most of this demographic change will take place in Asia and Africa as countries focus on economic growth through industrial development and employment opportunities that industry and its service businesses (suppliers) create for citizens (Siegel, 2018). Recent estimates indicate that about 700 million urban dwellers in the global south lack satisfactory sanitation facilities, with 75% of solid waste dumped in open sites (Scott, 2015). This creates poor water quality and inadequate water treatment as well. In 2001, less than 35% of cities in the global south treated their wastewater (UN, 2001). The issue is especially severe in sub-Saharan Africa and South and Central Asia: 62% and 43%, respectively, of the urban population living in slums/squatter settlements face high levels of disease risk, worm infection, cholera and diarrhea (Scott, 2015).

The global south has a high burden of disease, with 5.8% of children dying before reaching age five. Presently, demographics and epidemiological changes are shifting the disease burden from communicable to non-communicable diseases in low- and middle-income countries (LMICs) (Bollyky et al., 2017). Health and planning systems in LMICs are unprepared for these changes; according to the Independent Task Force (2014) on non-communicable diseases, LMICs are threatened more by non-communicable diseases (NCDs) than infectious diseases. According to the WHO (2010), the UNDP (2013), the Council on Foreign Relations, the Independent Task Force on NCDs (2014), and the World Bank, more than 60% of global deaths are NCD-related and almost 80% of these occur in LMICs, particularly across Asia and South America (Reubi, Herrick & Brown, 2016).

According to the UN (2011), the major challenge to development in the 21st century is NCDs. The relationship between NCDs and development is two-fold (World Bank, 2011; Alleyne et al., 2013; UNDP, 2013). First, a major cause of NCDs is rapid and often unplanned urbanization, which can lead to risks related to air quality, transportation safety, and other environmental health risks. Second, economic development provides the opportunity for populations to engage in more modern, sedentary lifestyles as well as tobacco use and unhealthy food consumption (Reubi, Herrick & Brown, 2016).

2.11. Urbanization in the global south

According to the United Nations (UN, 2001), in 1950, 68% of the world's total population lived in the global south, with 8% in the least-developed countries (LDCs). The LDCs are those classified by the United Nations as the least developed in terms of gross national income (GNI) (under US\$250 per capita), human assets (a composite of the Human Assets Index [HAI] based on health, education, nutrition and adult literacy), and those with high-economic vulnerability (based on agricultural instability, exports, and economic importance of manufacturing and modern services) (UN, 2019). By 2030, almost 85% of the world's population is expected to be living in the global south, with 15% in the LDCs. The population in the LDCs is expected to grow to 3.9 billion by 2030, with more population in urban centres and an average increase of 2.3% per year. There are approximately 498 cities globally that have over a million inhabitants, over 70% of which are located within the global south (UN, 2016).

While the global north faced urbanization during the industrial revolution, the current demographic transition has changed the locus of development; now the global south is urbanizing more rapidly (Seto, Fragkias & Gu, 2011; Parnell & Robinson, 2013). In the global south, many people from rural areas struggle to settle in urban areas to have access to good education, health and quality of life (Thomas, n.d.; Barrios et al., 2006; Smart & Smart, 2003; Haug, 2008).

Often, the process of urbanization in the global south involves poverty, inequality, environmental issues, and security and transportation problems, which many local governments in the global south do not have the capacity or resources to deal with. Urbanization is associated with a variety of changes in a city. For instance, an increase in population density creates property bubbles and, with the shortage of housing, results in social exclusion; this connected effect leads to a more broadly destabilized economy (Scott, 2015).

Planners, then, are tasked with organizing, planning and governing community settlements (Roberts, 2017). Urban planners can plan independently, in collaboration with, or sometimes in opposition to local government agencies for the betterment of people (Roberts, 2017). Communities can even do their own planning to alleviate poverty, for instance by building their capacity to deliver basic infrastructure facilities such as potable water, basic health care, waste management and microfinancing (Roberts, 2017). However, community involvement

can also create issues because of a lack of technical knowledge and related expertise, which is where planners can contribute.

If managed properly, urbanization can result in economic, social, and cultural benefits (Gresh, 2017). For instance, in a well-managed city where economic and network effects are efficient, the impact of transportation on climate can be reduced (Mufamadi, 2015). Many observers and organizations focus on cities and the connections between them at the local level, rather than directing them at the national level. A city's flexibility, innovations and dynamism can help determine whether urbanization makes it resilient or vulnerable to global risks.

Therefore, urbanization has pros and cons, and the pace of urbanization can present challenges, particularly in developing economies. To receive the benefits of urbanization and reduce the risks associated with it, it is important to establish good governance with effective regulatory frameworks.

In the global south, the major challenge faced by governments is to provide cities with appropriate infrastructure facilities and housing (Scott, 2015). If cities are vulnerable to negative impacts of urbanization, they can impose a variety of restrictions on rural-urban immigration. For instance, China introduced the *hukou* system, in which immigrants must obtain a residency permit to work in cities and receive assistance from social support agencies (Chan & Zhang, 1999). However, this type of system cannot work in developing countries that have few facilities for health and education services even in rural areas. Therefore, governments cannot adequately manage migration unless basic infrastructure facilities exist. Indeed, many cities do not have plans that support those transitioning from rural to urban areas (Bayat, 2000).

2.11.1. Issues in the global south due to urbanization

The global south faces various issues due to urbanization, five of which are described below.

- ***Safety and security***: Competition, lack of resources, and socio-economic inequality spark injustice and cause difficult law-and-order situations (Scott, 2015).
- ***Transportation-related health risks***: The most common modes of transportation in the global south are buses and minibuses. Cars are second, with walking and cycling third and fourth, respectively (UN, 2001). This raises the issue of a lack of active transportation modes available to people mainly because there are few designated bicycle or bus lanes, and high levels of ambient air pollution create a less-favorable environment for walking (Mufamadi, 2015).

- ***Socio-economic instability and health risks:*** Unplanned and rapid urbanization also bring socio-economic instability in less-developed countries (Cohen, 2006). This can result in poor or insufficient infrastructure, which ultimately leads to a lack of potable water and the potential spread of waterborne diseases. Urbanization also affects land use and the urban design of cities. As low-income people migrate from rural to urban areas, the size of slums and squatter settlements grows. It is estimated that 40% of the world's urban expansion is taking place in slums (Scott, 2015). Slums create social disparities, unhygienic conditions and widespread disease (Mufamadi, 2015). Urbanization also creates the issue of affordable and quality housing. People move to the city to make their lives better through quality education and better health, but they can get trapped in the high cost-of-living and competition for livelihoods (Scott, 2015).
- ***Inadequate infrastructure:*** Expanding cities also face infrastructure gaps. The Organization for Economic Co-operation and Development (OECD) estimates that governments will have to spend approximately USD 71 trillion by 2030 to deliver sufficient global infrastructure for electricity, road and rail transport, telecommunications, and water. The global south also faces financial constraints because countries allocate much of their national incomes to meet the basic needs of their populations. This calls for public and private collaboration in designing, constructing and maintaining infrastructure (Scott, 2015).
- ***Climate change and environmental degradation:*** The largest urban cities in the world also face the issues of environmental degradation and climate change. Little attention is typically given to the development of parks and open spaces in the global south.

2.12. Examples of healthy cities in the global south

According to Kummu and Varis (2010), 50% of the population lives in the areas between latitude 20° N and 40° N. This band includes Pakistan, Bangladesh and Northern India, all of which have extremely high population densities. While the WHO has (as noted above) well-established recommendations for healthy cities, the health of urban populations in low- and middle-income countries remains a contentious and pernicious problem even in the era of evidence-based policy making (Parnell & Oldfield, 2014), in part because improving health in the global south is so multidimensional (Herrick, 2014).

In the global south, agencies such as the WHO, World Bank, Asian Development Bank (ADB), and the UN have set up various projects to solve health-related problems (Sirsi, 2014). In low- and middle-income countries, the Healthy Cities movement received increased attention, between 1995-1999, through WHO support for projects in Cox's Bazar (Bangladesh), Dar-es-Salaam (Tanzania), Fayoum (Egypt), Managua (Nicaragua) and Quetta (Pakistan) (Harpham et al., 2001).

A multisector health approach is needed to address health problems in the global south (Kenzer, 2000). Social and economic conditions are strongly associated with an individual's ability to have a healthy lifestyle (Duhl & Sanchez, 1999). There is a lack of information and data available in the global south about the relationship between quality of life and the built environment; in addition, the capacity to analyze data is also limited (Prasad, et al., 2016; Mayur, 1979; McMichael, 2000; Harpham & Molyneux, 2001; Bowonder, 1987; Arora, 1995). The quality of life in these communities is constantly at risk due to urbanization, poor infrastructure, pollution and an inactive lifestyle. Thus, these must be controlled through various interventions from different policy making sectors (Mayur, 1979; Kumar et al., 2016). Below are some examples of how different cities in the global south have followed WHO healthy city principles to achieve healthy city status:

- 1. Using tools:** The WHO supported the healthy cities movement in Thailand, in 1994 (Sattam, 2007). In 2000, the country launched reforms at the national level advocating the introduction of health concerns in non-health sectors. (Phoolcharoen, 2003). Health Impact Assessment (HIA) was used as a tool to facilitate collaboration between different sectors and help combat environmental issues such as air pollution, pesticide contamination, and coal-fired power plants (Wernham & Teutsch, 2015).
- 2. Coordinating public and private organizations:** Slums or informal settlements pose challenges to urban health in low-income countries (Corburn & Karanja, 2014). For instance, a coordinated effort by the government, development agencies and civil society groups resulted in improved access to water and sanitation in the slums of Nairobi, Kenya. From 2000 to 2012, the proportion of slum households with access to public water taps increased from 2.7% to 59.3%, and use of flush toilets has had a six-fold increase while use of pit latrines

dropped by 50%. These improvements contributed to observed declines in child mortality and deaths from diarrhea (WHO Global report on urban health, 2016).

- 3. Identification of priority areas and inputs from stakeholders:** Werna et al. (1999) describe Fayoum's Healthy Cities project, carried out in 1995. Fayoum is a densely populated area with its main economic base in agriculture, and it had issues related to basic infrastructure, health and provision of social services. Priority areas were identified, and primary data was collected through interviews and focus-group sessions with key policy makers, hospital and health center staff, and local leaders (including the leaders of women's groups) seeking to understand their health needs and priorities. These identified priorities also highlighted the need for input from various sectors: local government, the private sector and the community.
- 4. Healthy interventions in the city:** The city of Rajshahi, Bangladesh, had dangerously high levels of air pollution. The city significantly reduced air pollution contamination from 2014-2016. This was done by replacing old brick kilns with cleaner, more efficient kilns, using battery-powered electric auto rickshaws, planting green strips, paving sidewalks to reduce dust, and promoting pedestrian environments. Rajshahi is now building Bangladesh's first dedicated urban bicycle lane to increase the number of residents cycling and reduce the use of motorized transport (Rajshahi, 2016).
- 5. Political will and cross-sectoral coordination:** The national government in India launched its National Urban Health Mission to improve access to primary health care and reduce treatment expenses for the poor. The program included 800 cities with 200 million people, of which 77.5 million were poor (WHO Global report on urban health, 2016). In another example, in 1991, Kooy-e-Sizda-e-Aban, a municipal district of Tehran, Iran, was selected as a pilot study area for a healthy city project (Motevalian, 2009). It aimed to increase health quality and improve services. People living in slums were relocated, and volunteers were trained to educate people about health and environmental issues (Shadpur, 1996). This project started because of strong political will and its linkage with national development plans. This plan was deemed highly acceptable among community

members and program staff, which led to success in capacity building (Motevalian, 2009).

- 6. Learning through successful examples from the global north:** In 1992, a healthy city project idea was launched in Johannesburg, South Africa, using a business plan from the health, housing and urbanization directorate. The city council toured healthy city projects around Europe. The Johannesburg healthy city project was initiated in 1993 after public consultation and it comprised a comprehensive approach to addressing health, environment and development issues. The success of this project was fundamentally due to the fact that the government and the WHO both played supportive roles (Mathee et al., 2000).
- 7. Preparation of healthy city plans and policies:** Cox's Bazar, a small city in Bangladesh, faced the issue of urbanization and sprawl beyond its limits that resulted in the creation of slums accommodating a large number of immigrants. Cox's Bazar Healthy Cities Program, initiated by the local municipality and led by the WHO, aimed to improve health and environmental conditions. It began in 1995 with workshops, and the creation of a steering committee and task forces. Cox's Bazar HCP received technical support and salaried coordination from the United Nations Development Program (UNDP). The aim of the program was to improve awareness, coordination and implementation of the town's health plan. However, the project failed due to the lack of political commitment resulting in limited implementation.

2.12.1. Conclusion

Countries in the global south have learned city planning concepts from European countries (Falola & Wahab, 2014). In the global south, the major issues are increased urbanization, slums and squatter settlements, poor urban air quality and lack of political will, specifically in low- and middle-income countries like Bangladesh. However, given the WHO healthy city guidelines and interventions, there are several examples of cities in the global south that have achieved healthy city goals.

Given these examples, other cities with other cities of similar size and with similar characteristics can learn to prioritize local health issues, allocate budgets for health-promoting interventions and policies, ensure the involvement of all stakeholders and community members,

ensure cross-departmental coordination, and use tools and incorporate healthy city principles into their policies and plans. These WHO healthy city projects can be implemented as a stand-alone project if there is sufficient funding, or they can be a part of the master plan/official plan or city planning document.

2.13. Healthy city case studies in the global north

There are numerous healthy city case studies from the global north because the WHO movement began in Europe. The aim of the healthy cities movement in the global north was to strengthen the role of cities in achieving health for everyone. The healthy cities movement, now called “healthy communities,” began in Canada in 1984 (Hancock, 1993, Flynn, 1996). Below are some examples of how different cities in the global north followed WHO healthy city principles to achieve healthy city status:

- 1. Promoting green/open spaces:** One important aspect of healthy cities is the protection of open spaces and areas for recreation. The City of Salzburg, Austria, dropped its old policy of using 70% of the city’s land for new construction and developed a new transportation strategy giving priority to pedestrians in all political and planning decisions; public transportation is their third consideration, and cars are last (Grant, 2015). This plan also resulted in positive economic development for the City (Crowhurst-Lennard & Lennard, 1987).
- 2. Ensuring public safety through community and political collaboration:** The City of Toronto’s model reflects a partnership between government and communities in creating healthy-living environments. Urban planners realized that communities were most concerned about safety. Therefore, city planners, city council members and other local government employees promoted safety through planning and design (Austin & Inglis, 1993). In Toronto’s case, the techniques used were simple and economically feasible. Urban problems were studied, then practical and coordinated solutions were designed through partnerships and sharing resources (Flynn, 1996).
- 3. Reducing inequality through urban regeneration:** The City of Győr, Hungary, initiated an urban regeneration program that was combined with social interventions to reduce inequalities in multicultural districts of the city. Recognizing the fact that there is no quick fix, the city began by assessing physical interventions in the physical fabric, thus creating green areas and areas for sports, play and leisure. In addition, Győr

introduced social interventions that aimed at improving community empowerment, health and lifestyle (Grant, 2015). These focused programs were developed for all people: children, families, mothers-to-be, mothers with young children, and the Roma community. Together, these interventions enabled Győr to achieve its aim of high health equity (Grant, 2015).

- 4. Healthy city concepts in plans and policies:** Liverpool was the first to host the Healthy Cities conference, in 1988. The healthy city project in Liverpool was divided into phases. The first phase included facilitating and implementing healthy city policies (Grant, 2015). The second phase, in 1993, focussed on developing a health plan for the city. This plan was written in consultation with professionals and community members with the ambition of creating a future for Liverpool that would be prosperous, just and environmentally sustainable (Otgaar et al., 2016).
- 5. Using tools:** In Bristol, England, the healthy city group broadly considered health and well-being and integrated it into the city's regeneration plans (Grant, 2010). Communities supported using this "health lens" for neighborhood planning; public health officers and local municipalities worked closely to create several tools to recognize physical elements that either detracted from health or supported health in their local areas. Consequently, their insights contributed to the neighborhoods' planning processes (Hewitt & Grant, 2010). HIA was used to establish the wider determinants of health and identify high-priority issues such as transportation, redevelopment of several areas, sustainable homes, green infrastructure, urban design, recycling projects and promotion of local jobs (Grant, 2010).
- 6. Projects for people with special needs:** Ljubljana, Slovenia, was given the charter of "Municipality Tailor-made for the Disabled," in 2009 (Ford, 2017). Slovenia's legislation requires obligations at the local level for social services and health care (Klancar et al., 2012). Ljubljana developed a comprehensive and systematic approach to services for elderly and disabled citizens (Grant, 2015; Klancar et al., 2012), women and children, victims of violence, people with mental health issues, the homeless, immigrants, people with drug addictions and eating disorders, promotion of healthy lifestyles specific to vulnerable communities, and for disease and the prevention of traffic injuries (Klancar et al., 2012). The city made many physical improvements including pedestrian-friendly

environments, easily available public transport and accessible public buildings, an interactive map of the city centre, and public lavatories. Other social interventions included training bus drivers to interact with and assist people with disabilities, training staff in health and social institutions in sign language and introducing cultural events with content designed for blind and visually impaired people (Grant, 2015).

- 7. Transportation and public health:** The Nashville Metropolitan Planning Organization (MPO) was among the first in the USA to recognize the importance of transportation and public health, specifically regarding physical activity, traffic accidents and air pollution (Meehan & Whitfield, 2017). The city adopted health-based scoring criteria to guide selecting and funding transportation projects, resulting in a marked increase in the number of projects that included provisions for cyclists or pedestrians (Wernham & Teutsch, 2015). By thinking systematically about the health impacts of transportation, the MPO advantageously used public resources in a way that met its goals of providing accessibility and mobility for people and goods, while minimalizing undesirable impacts on populations and environmental health (Meehan & Whitfield, 2017).
- 8. Promoting healthy diets:** A campaign to promote health was launched in Lodz, Poland, in 1987, with the aims of protecting natural resources and promoting healthy diets. It also decreased the duplication of services. The most important aspect of the Lodz healthy city project was its broad view of health-related issues, which received funding in the city budget despite changes at the local-authority level. In short, creative partnerships among non-governmental organizations (NGOs), universities, businesses, public health departments and health service facilities, and a broad view of health status were the keys to its success (Grant, 2015).

2.13.1. Conclusion

In the global north, approaches to building healthy cities differ between Europe and North America. Hancock (2014) notes that participating cities of the WHO Healthy City Europe initiative focused on public policy, comprehensive city planning, equity, sustainable development, social development, tackling the determinants of health, democracy, healthy-living environments, health impact assessments, physical activity, and involvement of political leadership at the local level in all important health and built environment-related decisions.

Hancock (2014) also notes that there is a difference in the healthy city concept between Europe and North America: Europeans focus on their larger cities; North Americans focus on small and large communities within cities. Thus, the global north has implemented change based on healthy city principles that were achieved within the framework of local infrastructure.

2.14. Comparison of healthy cities: global north versus global south

Urban health issues and solutions differ slightly in countries/cities of the global south and global north. There are healthy cities around the globe. Each healthy city has different issues, and each has tackled them accordingly. The advantage of the WHO's healthy city concept is that cities can identify their specific issues and then decide on their own solutions. Good examples can be found in both the global north and global south.

Urban attributes that contribute to health in cities of the global north and global south are the same, although local issues differ. Thus, there is a need for reliable and unbiased measures. Studies on the global north focus more on physical activity, food security, and creating less obesogenic environments; in the global south, the healthy city movement focuses more on creating a healthier environment in slums and squatter settlements and improving the population's quality of life and air quality.

Built environments in the global north also differ largely from those in the global south in terms of density patterns (Giles-Corti et al., 2016). Cities in the global south have high densities and compact neighborhoods with greater social inequality (Mayur, 1979). In many countries in the global south, poorly built structures are linked to poor sanitation, poor housing quality, and uneven access to health, food and hygienic conditions, all of which are major causes of chronic disease in low- and middle-income countries (Srinivasan et al., 2003; Kumar et al., 2016). Hence, multifaceted and complex connections are at play when the built environment and urban health associations are linked in countries in the global south (Giles-Corti, et.al. 2016).

2.15. Summary

This review explores the history of the WHO Healthy Cities movement and its fundamental implications in the fields of public health and urban planning, and poses an important question: *To what extent do healthy city recommendations vary in the global north versus the global south?* Health and urban planning practices are undeniably linked and require multi-sectoral and interdisciplinary coordination. These links are further clarified by identifying

and examining the importance of different urban attributes and how they can create healthy urban development. Last, real examples of healthy city urban planning projects demonstrate that such a framework and perspective can, in fact, foster positive outcomes.

Physical and social structures in cities can be revamped and updated to more meaningfully engage with the health sector. The WHO is poised to assist cities around the globe in embracing a systematic approach to improving their interlinked environmental, economic and health challenges, and supporting coordination between sectors and across governance, finance, planning and outreach processes.

Countries in the global north initiated the concept of the healthy city, which was later adopted by countries around the globe with the help and support of the WHO. While primary urban health issues differ around the globe, basic themes for creating healthier cities are the same. WHO guidelines provide the basics that identify urban attributes contributing to healthy living conditions. These urban-sector policies, also mentioned by Giles-Corti et al. (2016), are important key variables to consider when first thinking about urban health.

Also, there are other reasons why people across the globe face disease and a poor quality of life. There are the inequalities of the poor/rich divide— not just the dividing line at the equator. There are neighborhoods in the global north that face the same issues as most neighborhoods in the global south. Proper plans and policies are required to make city environments healthy because cities are all burdened by urbanization, which is expected to increase in the future.

2.16. Limitations

There are many examples of associations between urban health and city structure in both the global north and global south, but there is little research that directly compares the two. The literature also lacks investigations into what countries of the global south can learn from those in the global north to reduce pressure from chronic disease. There are opportunities to work to develop strategies that promote research on the interdisciplinary nature of health and the built environment, with the major focus on how this relationship can be implemented worldwide. As Hancock and Duhl (1988) argue: “A city is like a living human organism. One cannot be healthy if the liver is sick.” The community, the city and the world are but one complex organism and must be dealt with as a whole. Healthy Cities, as a model of community governance, offers a way of working that is inclusive.

3. Research Methods Overview

3.1 Introduction

This section provides describes the research methods used in this study to understand healthy city principles and then to identify the barriers to and facilitators of a healthy city for the case study city of Lahore, Pakistan. This chapter consists of a description of the research approach, techniques and methods that were used to collect and analyze data. It covers the study area, research process, research paradigm, data collection, research instruments, and data analysis.

The research philosophy described in this chapter provides an understanding of why the qualitative methodology and descriptive study approaches were used in this research. Also discussed are the details of key informant data collection including an overview of the sample selection approach, a description of the participant sample, ethical considerations, and the limitations of this research.

3.2 Study Area

Pakistan a global south country has a population of 212.2 million (World Bank, 2018), and is located in South Asia. In many rapidly expanding cities in Pakistan, population growth has resulted in unplanned expansion as well as mushrooming urban slums and low-income settlements. In Pakistan in general and in the province of Punjab (where the case study city of Lahore is located) in particular, urbanization is occurring at a very fast rate. Punjab province is the most populous region of the four provinces of Pakistan, with a growth rate of 2.13% per annum. Its urban population is 40 million and has a population density of 536 people per square kilometer (Population Welfare Department, 2016).

Non-communicable diseases (NCDs) are the major cause of death in the country; 32% of premature deaths and 37% of disability-adjusted life years are attributable to NCDs (WHO, 2018). There is the National Action Plan for Prevention and Control of Non-Communicable Diseases and Health Promotion in Pakistan (2004), which was prepared as a joint publication by the Ministry of Health, the Government of Pakistan, and the World Health Organization, Pakistan office. The report notes that NCDs impose a heavy economic burden and are responsible for almost 55% of the total deaths in the country (WHO-EMRO-Pakistan, 2019).

Addressing NCDs in a developing country like Pakistan is challenging because of the lack of resources, financing, awareness and education. In terms of the socio-economic context, according to the Pakistan Bureau of Statistics, in 2018 there was high unemployment in Punjab (6.3% in 2015) (Human Development Report, 2019). Moreover, according to the UNDP, in 2019, the poor in Pakistan worked for \$3.10 per day and only 52.2% of the population was employed (Human Development Report, 2019). Under these socio-economic conditions, it can be difficult to implement a diverse range of strategies to prevent NCDs; incorporating these strategies into urban master plans is an approach that can be cost effective.

This research uses Giles-Corti et al.'s (2016) framework to evaluate plans and policies for the City of Lahore in terms of the extent to which they support health. Pakistan is a WHO Member Country of the Eastern Mediterranean Region. The WHO has carried out many primary healthcare projects in Pakistan. According to the WHO Eastern Mediterranean Region's healthy city guidelines (2007), rapid urbanization contributes to the substantial burden of health issues in the region.

The WHO, Pakistan's Ministry of Health and Punjab's local administrators are stakeholders in the development and implementation of the proposed long-term master plan. At the provincial level in Punjab, a five-year strategic plan was prepared to address four NCDs: cancer, diabetes, and cardiovascular and chronic respiratory diseases. The plan focuses on the prevention and control of these hazardous and preventable diseases. It shows that addressing NCDs in a low- to middle-income country like Pakistan is a multidimensional challenge that requires focus from people at the ministries of health, planning, agriculture, education, finance, housing, communication, the environment, and labour to ensure collaboration and consultation (The National Action Plan for Prevention and Control of Non-Communicable Diseases and Health Promotion in Pakistan, 2004).

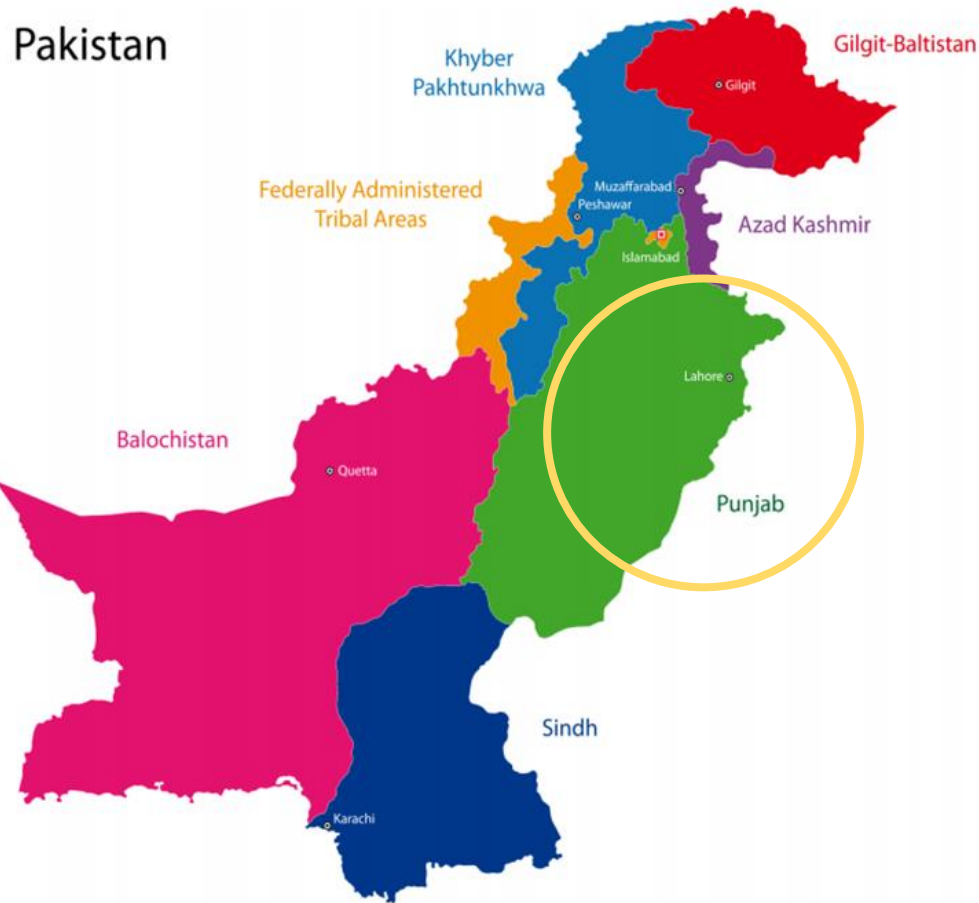


Figure 2 Map of Pakistan - circled portion is the location of Lahore

Source: <http://cliparts.co/cliparts/pc5/oXe/pc5oXeaoi.png>

3.3 The city of Lahore- A typical global south city

Lahore, Pakistan, was selected as a case study city in the global south. Lahore was selected because the city had recently decided to update its existing master plan. As a city of low- and middle-income country, it is undergoing rapid urbanization and an epidemiological transition which is characterized by occurrence of different types of non-communicable diseases (diarrhea, dysentery, respiratory diseases etc.) with varying magnitude (McKeown, 2009 and Oman, 2005).

Lahore is a typical example of the cities in the global south. The modern urban planning in the global south cities is traced to the planning standards introduced by the colonial masters and its impact is quite obvious in physical organization of many cities (Onodugo & Ezeadichie, 2019). The urban morphology of Lahore also shows the impacts of colonial planning laws.

Lahore is the provincial capital and largest city of the Province of Punjab and is a hub of civic and business opportunities. By population, Lahore is the second-largest city in Pakistan, fifth largest in South Asia, and ranks thirtieth in the world (Government of Punjab, 2013) (NESPAK, 2004). Just over a fifth (22%) of the population of Punjab live in Lahore (Haq & Arshad, 2009) and the City's urban population growth rate is 4.3% per annum (Aziz et al., 2014). The city existed for thousands of years and has signs of development patterns and policies of British Colonial Governance.

Lahore simultaneously confronts rapid urban expansion and rural-urban migration. Due to its weak political and institutional structures and lack of coordination between its public-public and public-private agencies, the City's development and growth are haphazard (Hameed, 2008). The government's current solution to the growing population is building new road infrastructure, which is the reason for the City's decreasing tree cover (Ghani, 2018) that has resulted in increasing smog (Riaz, 2018).

According to UN Habitat (2003) and Urban Unit Lahore 2006, 45% of the urban population of Lahore lives in slums that have poor municipal services. In addition, the Integrated Master Plan of Lahore (IMPL-2021) was prepared without proper public and stakeholder consultation (Hameed, 2008). Therefore, research is required to guide planners and decision makers on issues of concern to the City and to provide specific recommendations for making the City of Lahore a healthy city based on the principles of the WHO.

Projections indicate that Lahore will become a megacity by 2030. According to Atlas of Urban Expansion (2016), the Built-up Area Density of Lahore in 2013 was 391 persons per hectare, increasing at an average annual rate of 0.2% since 2000. The Urban Extent Density of Lahore in 2013 was 261 persons per hectare, increasing at an average annual rate of 0.4% since 2000.

Finally, the relevance of this research is the potential for its findings to actually be applied, given that Lahore is currently preparing its new Master Plan 2040. Also, the common factors such as urban morphology, density, British Colonial governance, rapid urbanization, weak political system and less resources makes Lahore a typical case study for large cities in the global south. The results of this study will be shared with Lahore's Development Authority.

3.4 Research Philosophy/Paradigm

This research is underpinned by pragmatic philosophy. It includes detailed understanding of healthy urban planning issues through a holistic perspective by using exploratory qualitative research methodology. This guides the researcher in exploring how healthy city guidelines may be adopted in plans and policies for the selected case study city in the global south.

This research philosophy is helpful in providing the ability to develop solutions and recommendations for real-world issues by allowing insights into the associated multiple factors (Creswell, 2014). The two-phase qualitative data collected provides a deeper understanding of barriers to and facilitators of healthy city planning. The first phase of this study included understanding and analyzing the existing master planning policies for Lahore, which provided a foundation for research by identifying the extent to which health is an implicit or explicit component of the existing policies. The second phase included interviews with decision makers (key informants) and provided deep understanding of planning and policy practices.

3.5 Research Approach

This research made use of both primary and secondary data. Secondary data sources were used for the first and second objectives of the research: to identify the published literature that characterizes healthy urban communities to understand urban attributes that contribute to improved public health; to examine the extent to which the City of Lahore, Pakistan, considers health—and the determinants of health—in its existing policies and plans. Primary data, on the other hand, was sourced from participants (key informants) involved in the study to explore perspectives on the barriers to and facilitators of healthy city policies adopted in the City of Lahore. The research approach used in this study is the qualitative research approach described below.

3.5.1 Qualitative research

This research uses a constructivist approach, which means that learning is a process in which individuals build new ideas or concepts based on prior knowledge or experience (Kelly, 2012). It views meaning as that which emerges from the process of social interpretations and interactions (Creswell, 2013). According to Mason (2002), a qualitative research approach factors research element directly into its analyses and details. In other words, it is an inductive approach with a comprehensive description of processes that generate narrative understandings

into phenomena that are difficult to quantify (Young & Hren, 2017). The qualitative research approach consists of a number of investigations that include collection of evidence and open-ended questions (Creswell, 2013).

Qualitative research includes understanding human actions by knowing who the research participants are (Palys et al., 2008). It should be systematic, accountable, flexible, and provide readers the material on which they can base their judgement (Mason, 2002). The disadvantage associated with the qualitative research method is subjectivity, which could lead to difficulty in establishing the validity of data and researcher bias (Palys et al., 2008).

Qualitative research is selected when there is little knowledge or limited understanding about any phenomena (Young & Hren, 2017). It was selected for this research because there is limited knowledge in the global south about why a city in the global south would *not* directly pursue the healthy city concept, since the majority of literature published to date has focused on cities that *have* in some way implemented a healthy city policy or process.

This research project uses a case study approach for the City of Lahore, Pakistan (which has not officially signed-on to participate as a WHO healthy city), to qualitatively explore 1) the extent to which urban plans explicitly or implicitly include healthy urban policies; 2) key stakeholder perceptions of barriers to and facilitators of developing or implementing health-promoting urban plans and policies. It does so through 1) a content analysis of existing plans and its policies; 2) qualitative interviews with key stakeholders in the City of Lahore. Below, methods for each are described in further detail. As noted above, Lahore is currently creating its next master plan, which makes it an ideal city in which to ask these research questions given that many planners are currently considering the future direction of Lahore.

3.6 Document Analysis/Content Analysis of Policy Documents

This research includes a content analysis of Lahore's existing policies and plans that analyzes the extent to which urban policies include (even implicitly) considerations of health. This method helped fulfill the second research objective. Initially, the research identified all current urban plans and policies for the City of Lahore, Pakistan. However, the theoretical framework used in this research is based on Giles-Corti et al.'s (2016) eight urban policy systems; therefore, the Integrated Master Plan of Lahore 2021 and the Lahore Urban Transport Master Plan 2030 were selected as the key documents for analysis because they are detailed

planning and policy documents that focus on all urban strategies. These plans for Lahore were then analyzed, based on the eight urban policy systems outlined by Giles-Corti et al. (2016).

3.6.1. Data collection

First, a Google Web search was used to identify all policy and planning documents. The following keywords were used: *official plans, master plans, planning documents in Lahore, Pakistan*. The planning documents IMPL-2021, Amended IMPL-2016, and Lahore Urban Transportation Plan-2030 were available on the official website of the Urban Unit (a private sector company owned by Government of Punjab).

Documents were purposely selected to reconstruct a case (Flick, 2006:249). In total, seven documents were identified—two master planning documents and five other relevant policy documents:

1. Lahore Development Authority Building and Zoning Regulations
2. Lahore Development Authority Classification and Reclassification Rules, 2007
3. Environment Protection Policy
4. Integrated Master Plan of Lahore, 2021 (Volume 1, 2 & 3), amended in 2016
5. Lahore Urban Transportation Master Plan (Volume 1 & 2)
6. Punjab Development of Cities Act
7. Parks and Horticulture Authority Act

A total of two documents were selected for further analysis: IMPL-2021 (3 volumes), amended in 2016; Lahore Urban Transportation Master Plan (LUTMP-2030) (2 volumes). They were available on the official website of the Urban Unit and the Lahore Development Authority's official website.

3.6.2. Data compilation and analysis

The step after document identification was downloading, saving, and reading through the documents to ensure that they were relevant. Giles-Corti et al.'s (2016) framework was used to construct a data extraction table in Excel. Specifically, each row represented a document, and each column represented one of the eight urban policy systems identified by Giles-Corti and colleagues as being relevant to health. Different sections/parts of the policies were then added to applicable cells in the Excel sheet. For instance, policies related to transportation were added to the transportation policy column. Whole documents were read through to determine where they aligned with Giles-Corti et al.'s (2016) urban system strategies.

The literature review highlighted key urban attributes of healthy cities; thus the documents were read thoroughly to identify whether these attributes are implicitly or explicitly related to health or if they have no or negative effects on the healthy city environment (see Appendix H).

To identify differences between explicit and implicit outcomes of the policies, the eight urban system policies defined by Giles-Corti et al. (2016) were categorized according to *explicit* health outcomes based on WHO guidelines and healthy city criteria; other than these, policies that indirectly promoted health and the urban environment were considered implicit health outcomes:

1. **Transportation:** healthy transportation policies include pedestrian and bicycle accessibility, policies for active transportation, policies for public transportation improvements, and policies for walkability, improved sidewalks and reduction in accidents;
2. **Social and health services:** policies for improved quality of life, access to healthy food and environments, disease control, climate issues, efficient sanitation and drainage, access to safe drinking water, access to primary health care, safe routes to health services, coordination between different departments, proper waste disposal;
3. **Education:** safe access to school routes, proper signage, toilet facilities, and good education standards;
4. **Employment and economic development:** policies for safe access/routes, meeting employment needs of the population;
5. **Land use and urban design:** policies for mixed use/compact development/completed streets, heritage preservation, renewal, environmental protection (control of air, noise and water pollution), planting trees;
6. **Housing:** policies for affordable and quality housing;
7. **Public open space and recreation:** policies for active and passive recreation;
8. **Public safety:** crime free environmental design, safe neighborhoods.

3.7 Key Informant Interviews

After the content analysis, the next qualitative method used in this research was key informant interviews. This method was used to explore perceived barriers to and facilitators of developing or implementing health-promoting urban plans and policies in Lahore. Key informant

interviews are qualitative, in-depth interviews with people who are generally selected for their first-hand knowledge about the topic of interest and who are likely to deliver needed evidence concerning, ideas on, or insights into a research topic or issue (Podrabsky, 2006). The primary goal of key informant interviews is obtaining a *description* of perceptions and experiences rather than *measuring* aspects of the experience (Podrabsky, 2006).

Key informants are representative of the overall population that may be affected by whatever issue is being considered, and because they are supposed to have the most knowledge of the subject matter (Lavrakas, 2011).

Key informant interviews can be structured or semi-structured. Structured interviews contain a list of specific questions whereas semi-structured interviews contain open-ended questions with a free-flowing style (Kumar, 1989). The number of study questions should be kept to a minimum (Kumar, 1989). When study questions have been formulated, the next step is to conduct a review of information from the available records, published and unpublished documents, and statistical records (UCLA, n.d.; Kumar, 1989). Then, a conceptual framework is developed that shows the interrelationship between key variables (Kumar, 1989). The next task is to prepare an interview guide that lists the topics and issues to be covered during an interview (USAID, 1996). The quality of key informant interviews rests largely on choosing the right informants (Sherry, 1999).

3.7.1. Participant recruitment

Urban planners were considered key informants who have knowledge about Lahore's master plans because their position requires them to prepare policies and implement them for the City. Their expertise in and knowledge of urban planning and planning documents allowed them to indicate whether they think Lahore has incorporated healthy planning principles into its planning documents, and what are the City's barriers to and facilitators of healthy city planning.

Key informants were recruited using purposeful sampling with follow-up snowball sampling. This was done to obtain diversity in the sample that would reflect heterogeneous perspectives (Palinkas et al., 2015). Urban planners in the public sector were contacted through a contact person working in the public sector while private-sector planners were identified from the LinkedIn website. The second stage was snowball sampling, which was done to identify more people. This technique was adopted because the sample was dependant on expert

knowledge. Participants were asked to provide information if they knew someone else willing to participate and help answer questions (snowball sampling).

In this way, validity and reliability of the data increase because answers are received from the specific informants who are knowledgeable about the subject under consideration and who give a holistic perspective based on each participant's experiences.

Semi-structured interviews with open-ended questions were used. The questions included in the key informant questionnaire were used to verify document analysis findings and to explore urban planners' knowledge about healthy cities. See Appendix E for the key informant interview questionnaire.

3.7.2. Participant sample

The initial plan was to conduct 15 interviews, or until data saturation was achieved. Ten interviews from key informants in public- and private-sector urban planning and development organizations were conducted because saturation was achieved. The interviews were conducted by telephone and lasted 30 to 40 minutes (see Appendix E). Variation in the sample, i.e. the perspectives of public and private planners, provided different opinions and helped the research achieve significant depth.

3.7.3. Maximum variation

The sample group comprised five males and five females, of which five were working in public-sector and five in private-sector urban planning departments. Of all participants, four were directly involved in the new master plan preparations and related projects, and two were indirectly involved as stakeholders. Five broad themes were identified during the interviews, which were then connected to the eight main themes of Giles-Corti and colleague's (2016) framework.

3.7.4. Key informant interview format

A semi-structured interview guide with open-ended questions was used (see Appendix E). Urban planners in the private sector were contacted through social media sites such as LinkedIn and also through their public websites. A contact person in the public-sector organization agreed to send the recruitment-email information letter to urban planners on behalf of the researcher, to confirm that they wished to participate in the research study.

3.7.5. Ethics and role of the researcher

Research involves ethical considerations. This study received ethics clearance from the Office of Research Ethics at the University of Waterloo (ORE #40881). There was deemed to be no risk to participants for their comments in the key informant interviews because the identity and response of all participants was kept confidential throughout the research. The emailed recruitment letter informed each participant of their right to withdraw from the study at any time. Verbal consent was then obtained from applicants and a feedback appreciation letter was sent to them after they participated.

Each participant received a copy of the final analysis for a verification and validity check. Permission was not required from employers because participant responses were based on their personal perspective of the City of Lahore.

Study participants used a personal identifier (full name) on their consent forms. Participants were assigned an alphanumeric code. Because participants might identify themselves during the audio-recorded interviews, the original data set was treated as an identified data set with potentially sensitive information. As such, this data was encrypted using FileVault for a personal Apple computer and stored on a separate USB drive that was placed in a locked cabinet in my supervisor's office.

Verbal consent was obtained during a telephone call and was recorded on a recording device. The emailed information letter sent to participants included notice that an audio recording is part of the interview process; no participants did not agree to an audio recording. Most of the key informants responded in Urdu, the official language of Pakistan. The recordings were line by line translated into English by the researcher. The interviews were translated by word. The information letter and interview questions were only provided in English.

3.7.6. Analysis of data

Respondents working in the public sector were part of the team preparing a new master plan for Lahore. The private-sector planners were not directly involved in the master plan process but all of them took part in stakeholder consultation sessions. Interviews were recorded, translated, and transcribed. Common themes, and barriers to and facilitators of healthy city planning for Lahore were identified and a spreadsheet was prepared on Microsoft Excel. Data were then analyzed and compiled in tables and charts on different themes representing whether

urban planners were aware of the WHO healthy city movement and what their opinions were on making Lahore a healthy and livable place.

3.8. Rigour, quality and trustworthiness

Steps were taken to ensure credibility and rigour in this research study. Rigour is defined as the process of creating the process of creating reliable research work that engenders confidence in the findings (Denzin & Lincoln, 2005). Whereas, trustworthiness is determined by the validity of research as it relates to the quality and transferability of results Dillion, 2003).

In qualitative studies, researchers demonstrate these abilities to ensure that their research is credible. To establish the quality of the research, the key informant interview guide was tested prior to conducting interviews to identify any problems. Then, interviews were conducted with urban planners/officials working in the City of Lahore. The interview questionnaire was tested with master's students in urban planning in Lahore. Using these steps, the amount of time needed for interviews could be estimated.

3.9. Limitations of research

The disadvantages of qualitative research are generally due to the extensive amount of labor required to develop findings and that findings are typically not generalizable (Plays & Atchison, 2008). In this study, the limitation is that documents and interview data for cities in the global north and global south are not directly compared. Also, this research is specific to the City of Lahore and cannot necessarily be generalized to other contexts in the global south.

4. Results and Findings

4.1. Introduction

Pakistan became a member of the WHO's Eastern Mediterranean Region (EMR) in 1947. The country's EMR office was established in 1960, after which the WHO provided technical support to the government. A network of healthy cities was also established under the WHO Regional Office with the purpose of strengthening health services and researching and addressing public health issues. Pakistan is highly vulnerable to hazards because of its lack of emergency preparedness; there is also a lack of research addressing preparedness and mitigation measures at the local level (Haq et al., 2018). In addition, Pakistan is deficient in health workers (WHO, 2006).

Pakistan is currently working toward adopting healthy city criteria by registering the country's capital, Islamabad, in the Healthy Cities Programme network of the World Health Organization (Niazi, 2017). Prior to that, Pakistan had one example of a healthy city project; it began in Quetta, the provincial capital of Balochistan, in 1995. By 1997, Quetta's Healthy Cities project saw limited progress due to political instability in that city (Werna et al., 1999). Although efforts are being made, Quetta still has not achieved healthy city status due to this political instability.

The case study city, Lahore, provincial capital of Punjab, is a hub of civic and business opportunity that is confronting simultaneous rapid urban expansion and rural urban migration. The City of Lahore has entered into a new era of community development and planning. It was selected as the location for this case study because it represents an area that has shown extensive change in population density and growth. According to UN Habitat (2003) and Urban Unit Lahore 2006, 45% of Lahore's urban population lives in slums that have poor municipal services.

The first part of this chapter discusses findings from content analyses of Lahore's master plans that assess the extent to which urban policies include (even implicitly) considerations of health (sections 4.2 to 4.5). The second part of this chapter reports on findings from the key informant interviews and describes the extent to which participants think urban policies in Lahore's existing master plans include the consideration of healthy city principles (sections 4.6 to 4.11). Section 4.12 summarizes key findings described in chapter 4.

4.1.1. Policy transfer versus policy mobility

As noted regarding the theoretical approach of this research, policy transfer is an outdated concept. For instance, the City of Vancouver is a healthy city based on all guidelines (2015-2018), which include the strategies that envision a healthy city. One of the strategies included in the City's plan is active living outdoors. The goal of this strategy is to engage all Vancouverites in active living and in their incomparable access to nature. If we transfer this policy directly to our case study city, Lahore, it would not be applicable because it would be hard to provide residents with a park within a five-minute walk that is accessible and has quality and diverse amenities, resource management and best horticultural practices since the City of Lahore has limited resources.

Instead, the policy can be mobilized to offer a vision of society (and policymaking) as a multi-scaled, emergent social process. A mobilized policy can be used and adapted for Lahore's context. This approach focusses on, among other things, the various ways in which humans are mobile, how people mobilize various objects, and how technologies—whether mobile themselves or fixed in place—facilitate movement (McCann, 2011). For instance, for Lahore, there are issues around security in parks and open spaces that must be prioritized. Vancouver's strategy can be modified to provide safe and equitable access for residents of Lahore to enjoy active living and being outdoors.

4.2. Description of analyzed documents

Two master plans were identified using a Google search: The Integrated Master Plan of Lahore (IMPL-2021), prepared in 2005 and later amended in 2016, i.e. the Amended Master Plan of Lahore (AMPL-2021); the Lahore Urban Transportation Master Plan (prepared in 2012). The IMPL-2021 was amended in 2016 when the jurisdiction of the Lahore Development Authority (LDA) was increased at the Division level to include the districts of Kasur, Nankana Sahib and Sheikhpura; this amendment was designated AMPL-2021. Nothing changed in the master plan document except a notification of amendment (see Appendix G) stating that the three districts named above would now be under the control of the LDA; therefore, only the AMPL-2021 was included in the analysis.

The proposed framework of the master plans did not include a specific role for the Development Authority in the implementation of the plan. The role of the Development Authority is important because it is the governing and implementing body. Also, the master plan

was not updated, which is a major issue, because when the IMPL-2021 was prepared, there were only six towns. At present, there are nine towns comprising Lahore and the jurisdiction of the Lahore Development Authority has increased to the division level with the inclusion of the Nankana Sahib, Kasur and Sheikhpura districts.

The LUTMP-2030, prepared in 2012, comprises two volumes. The first volume contains primary information about the situation that exists in Lahore; the second volume describes the priority action areas and focusses on providing an efficient public transportation system, i.e. a plan for efficient public transportation that increases road capacity and traffic management (through junction re-design, parking management, and pedestrian and bicycle lanes). In short, the plan proposed multi-model interchanges for light rail transit (LRT) and separation of non-motorized and motorized Lahore traffic. To confirm that all documents had been identified, a question was added to key informant interviews to confirm that all appropriate documents at the local level had been obtained.

4.3. Health analysis of plans

The principles and guidelines outlined by the WHO helped in exploring a deeper understanding of the texts, while the conceptual framework (eight urban system policies) developed by Giles-Corti et al. helped in understanding the connections between healthy built environments, urban planning and health. Consequently, findings from this analysis are underpinned by the literature search, theoretical framework, original research objectives and informant responses.

The selected master planning documents include policies related to public health, education and urban design. The IMPL-2021 and LUTMP-2030 include secondary data on employment, health and educational institutions, and identify future demands in these sectors. The policies do not promote or identify accessibility issues; for instance, designs for safe routes to schools are not prioritized in the plan. These plans also miss the connection between active modes of transportation and how they can be integrated into modes of travel, for instance, developing provisions for safe bicycle parking at health, educational and other institutions.

According to Giles-Corti et al., (2016), urban design (e.g. sidewalk design, streetscapes, etc.) and distance to transit determine the quality of the built environment. In the studied plans, the health and built environment connection is missing in education, health and urban design policies. For example, instead of policies that could provide direction in these areas, they merely

depict the existing condition of the city. There are no goals for improving the quality of the built environment, for instance through promoting compact communities, completing street designs, or providing safe routes to schools or toilets in the washrooms. As far as public health is concerned, plans do consider air and noise pollution issues, but the policies are not explicit, nor do they explain how to overcome these issues. Instead, they focus more on road construction projects to reduce the traffic congestion issues in the City.

Analysis of the IMPL-2021 shows that it was mainly prepared based on secondary data such as the 1998 Census Report, a socio-economic survey of Pakistan. Section 3.0 of Volume 1 of the plan states that, the only primary data collected is through consultative meetings, workshops and discussions with elected public representatives, professionals in private and government sectors. This information was outdated even when the plan was prepared in 2005 and lacks strategies for providing people with healthy living conditions.

The plan includes affordable housing strategies to address the expansion of slums and squatter settlements in Lahore but lacks explicit or implicit policies that encourage healthy or higher quality city dwellings. The IMPL-2021 does focus on the provision of basic infrastructure facilities like water, sewer systems and drainage, but how they will be provided, maintained and implemented to ensure that people have some quality of life and health is missing from the plan.

The plan explicitly mentions the need for parks and recreation facilities in the City and acknowledges their importance, but there are no specific examples of how the City intends to maintain its open spaces or how to make open spaces safe and accessible for people.

The IMPL-2021 identifies key issues that need immediate attention: 1) land management and housing; 2) traffic and transportation; 3) sustainable living environment; 4) urban governance; 5) finance. It is interesting to note that improving community health was included in the implicit objectives and guidelines of both plans, which could, if interpreted and implemented successfully, result in a healthier city. Absence of the explicit consideration of public health in the goals, objectives and vision of these plans provides an indication that healthy urban planning is not on the City's planning agenda. In short, that agenda does not emphasize creating opportunities for active transportation through infrastructure and land use policies or creating diverse and compact communities with access to educational institutions, parks and recreation.

Enhancing the health of the community is referred to only a few times in Lahore's master plans. The plans do identify issues related to healthy urban planning (i.e. they implicitly address

health concerns). For example, the separation of industrial land use from residential use implicitly takes into consideration health and urban planning. These issues, if explicitly addressed through policies and strategies in terms of design guidelines, recommendations and goals, could result in healthier community practices.

The plans identify issues present in Lahore at the time they were prepared, but these plans were not revised. Study findings regarding the plans are not generalizable to the more urbanized Lahore of today, which is facing many issues such as poor-quality air and housing, unemployment, and poor infrastructure. In addition, the IMPL-2021, Volume 2, identifies funding issues: “[...] the public sector is unable to provide finance. Activities of local authorities are hampered due to weak revenue base, unsound budgetary process and delay in release of funds by government” (IMPL-2021).

The IMPL-2021 provides future growth calculations, up to 2021, in various sectors such as population, housing, health, education and employment. It recognizes that, since each sector has varied and acute problems, it would be difficult to prepare a prioritized list. Most of these issues are interrelated and would need concurrently implemented solutions.

4.4. Summary of elements and findings from IMPL-2021 (AMPL-2016)

The major issues identified in the IMPL-2021 (AMPL-2016) summarized within the Giles-Corti and colleagues (2016) framework (see Appendix H) include:

- 1. Transportation:** congestion, pollution, poor road design and management, inadequate parking, encroachment on major roads, on-street parking, lack of professional and technical manpower;
- 2. Social and health services:** the major diseases in the City are diarrhea, dysentery, acute respiratory infections and scabies, problems include inadequate primary health care, increased population, deficient management, malnutrition, inadequate and poor water supply, lack of inter-sectoral coordination, inadequate funding and manpower, waste water disposal, improper waste disposal, no waste water treatment facility, and no laws that control medications.
- 3. Education:** 22% of school buildings were satisfactory but lack toilets, electricity, playgrounds and libraries, higher education operates on a budget deficit, poor education standards due to high demand;

4. **Employment and economic development:** shopping centres located along busy and congested roads make conditions unsafe for pedestrians, encroachment by vendors, lack of cohesive policy, overlapping functions, lack of coordination, misappropriated funds, weak management, lack of technical/professional knowledge, deficient accountability;
5. **Land use and urban design:** graffiti, neon signs, electric cables, encroachment, depleted housing, fragmented urban development, control by a number of authorities/agencies with overlapping functions, political and private pressure groups, bureaucracy and ineffective enforcement, conversion of agricultural land to other uses;
6. **Housing:** population increase causing shelter problems, illegal subdivision of agricultural lands resulting in squatter settlements;
7. **Public open space and recreation:** need to provide active recreation for youth, need for equitable recreational facilities and spatial distribution;
8. **Public safety:** fire alert system lags behind Lahore's needs.

Lahore's master plan can be considered a *land use plan* that provides details about the existing situation of the City and recommends future scenarios, up to 2020. According to the World Bank (2015), the master plans typically shows connection between buildings, social settings, and their surrounding environments but the 2016 amendments to the IMPL-2021 only provide a new land use map that includes three more districts (as described in the sections above) and these connections seemed missing. Master plan policies mainly generate implicit health outcomes but some of them are also explicit. For instance, for the transportation sector, the plan encourages providing safety for pedestrians and cyclists, providing public transportation services, and extending routes. These can be considered explicit policies of the plan. On the other hand, the plan also prioritizes widening roads *and* grade-separated facilities that could combat congestion.

Road construction to accommodate the increasing number of motorists does not have any explicit health outcomes but the implicit health outcome may be reducing short-term congestion on one hand and increasing smog and sedentary behaviour on the other hand. Similarly, the plan encourages driver training, vehicle safety tests, and the allocation of funds for road safety, which would result in explicit health outcomes such as a reduction in road accidents—but the plan does not include any strategies to achieve them.

As IMPL-2021 is Master Plan for Lahore therefore it includes the information about different urban sectors such as health, education, environment, transport etc. Lahore's social and health services sector, policies predicting an increase in the existing number of hospitals, clinics and dispensaries are forecasts based on data from the 1998 Census. These projections were even outdated at the time the plan was developed because primary data was not collected. The plan also encourages training health personnel, which can have explicit health benefits.

The plan encourages developing measures to protect the environment that safeguard against air, water, land and noise pollution. To accomplish this, it promotes an effective legal and institutional framework, planting trees, ensuring a potable water supply, improving drainage systems, and preparing storm water and solid waste management plans. The plan also encourages decentralization, accountability and community participation, with an increase in coordination between different departments; involvement of local councils, NGOs, and the private sector have explicit and implicit health outcomes.

The plan aims to enhance the education sector by equipping it with the required infrastructure. Education is the provincial government's responsibility; thus, the plan encourages the provincial government to prepare an action plan that confronts issues faced by educational institutions; there is no implicit or explicit description of health outcomes in these policies. Concerning employment and economic development, the plan's policies aim to increase commercial and trade activities to meet the demands of the population and reduce unemployment by enhancing the potential for employment. These policies do not have any explicit health outcomes, but an implicit health outcome could be a reduction in stress levels that can lead to less mental illness and heart disease.

One of the major objectives of the plan is to anticipate and reduce unplanned urban growth. Therefore, it promotes infill development. Strategies mentioned to accomplish this are dual markets, land pooling and land re-adjustment techniques. The plan also identifies areas for renewal as well as proposes the approach and methodology for preserving cultural heritage, upgrading *katchi abadis* and protecting riverbeds, and separating incompatible uses with strict land-use implementation. If implemented, all of these strategies generate explicit health outcomes.

The plan proposes subsidized housing for the poor using cross subsidies, incremental infrastructure, smaller lots and taxes. The plan also includes a typical layout for low-income

housing schemes, encourages environmental management planning, and requires mandatory tree planting; these measures would be undertaken for all new and existing housing schemes with the involvement of citizens. Such policies can result in an increase in the quality of life for residents. Thus, they can be considered to have explicit health outcomes.

The plan supports the significant role that open spaces play in responding to the recreational needs of residents and it places 80% of the responsibility for providing recreation areas on the private sector. It does not mention active or passive recreation or strategies for incorporating it in the City. Therefore, health outcomes will not be analyzed. Last, the plan does not include any major policies or strategies for public safety.

4.5. Summary of elements and findings from LUTMP-2030

The LUTMP-2030 is a transportation plan. Therefore, it includes policies that relate only to the transportation sector (see Appendix H for detailed findings). The LUTMP-2030 identifies Lahore's major transportation issues as follows:

- High pedestrian fatalities;
- Inadequate walkways and cycling routes;
- Poor project implementation, limited funding, encroachment, lack of road classification, no laws for pedestrians, cyclists, animal-drawn carts and hand-pushed carts, and illegal parking;
- There are many gaps and considerations missing in the National Transport Research Centre (NTRC) Manual for Signs e.g. work zone areas and signage for school children.

The plan identifies explicit policies to address these issues, as follows:

- Emphasizing the importance of traffic management, road safety, comfort and urban environments;
- Encouraging integrated land use and urban development with transportation and environmental management such as bus terminals that serve as connecting facilities for inter-city passengers;
- Managing parking, pedestrian/bicycle path development, and other cost-effective traffic management measures;
- Establishing a new organizational setup that makes decisions on various transport projects;
- Encouraging the government to develop mandatory safety audits to ensure road safety for road users, and framing regulations and rules under proposed road-safety legislation such as rules for operating road vehicles, legislation on compensation, speed limit regulations,

defining the responsibilities of pedestrians on roads, procedures to follow in the event of accidents, and allocating a budget for community education to change driving and road-user behaviour;

- Developing strategies that address a combination of minor road improvements, junction re-designs, and the increase in road capacity.

The LUTMP-2030 states that only 70% of the total waste from the City is picked up. It also indicates that the seven priority diseases as diarrhoea, dysentery, respiratory infections, malaria, and scabies, yet Lahore has a small number of primary health care facilities. Secondary and tertiary road/drainage networks in lower-income areas of the city have been neglected and become impassable for pedestrians and vehicles in the rainy season.

The plan encourages the city government to develop area-wide, computer-based transport planning models within the framework of overall city land use planning and to invest in research, development, educational programs and utilization of cleaner energy to reduce vehicular tailpipe emissions and improve air quality. It also states that the local government should ensure that environmental impact assessment is an essential component of transport and land use structure planning.

Due to urbanization, Lahore also faces a severe shortage of housing. The majority of housing units comprise two to three rooms, with three inhabitants per room, on average. Such household congestion is attributed to the high density in urban areas of Lahore. Insufficient housing is the reason that the *katchi abadis* have developed. “The living conditions in Katchi Abadis does not support life and those who are living in slum areas are vulnerable to unhygienic environment and extreme weather conditions. They are deprived people who do not have enough resources to maintain the health of their children” (PCEMF, 2011).

Health outcomes for the community are explicitly and implicitly stated in some strategies found in both the IMPL-2021 and LUTMP-2030, and there is mention of only an insignificant number of goals, recommendations or design guidelines that could result in a healthier city. For instance, increasing access to basic services, providing safe access to routes in the busy City of Lahore, ensuring easy and safe access to health care—in general, expanding public safety—are not mentioned in the plan. The intent of the IMPL-2021 was to create a detailed land use plan with strategies for the future growth management of the City, with the major focus on the transportation sector. There are no clear goals for healthy transportation strategies or land use

policies, which indicate that the plan does not create any connection between urban health, built environments and urban planning.

To some extent, the LUTMP-2030 emphasizes the promotion of sustainability and improvements to the transportation sector. It encourages creating opportunities for public transportation and improving transportation infrastructure, which can improve public health. Thus, the inclusion of sustainability indicates an awareness of the connections among urban health, built environments and planning, as well as intentions regarding improvements.

Both plans recognize the burden on transportation infrastructure caused by rapid urbanization. Neither master plan provides explicit directions on how to promote or introduce healthy transportation in the City. There are a few references indicating that active transportation and health should be encouraged, but there are no policies or strategies for creating and maintaining pedestrian or bicycle infrastructure, sidewalks and efficient public transportation.

Giles-Corti et al. (2016) suggest that active transportation can be encouraged by creating safe, attractive neighborhoods and safe, affordable and convenient transit systems. These interventions create healthier, sustainable and more compact cities by reducing traffic levels, environmental pollution, noise and crime. According to Pucher et al. (2010), active transportation reduces NCDs such as heart disease, diabetes, gall stones and some cancers. Malik (2013) contends that the major focus of IMPL-2021 is on the construction of roads and bridges; public transport, bicycles, rickshaws and horse carriages are considered affordable and convenient modes of travel in the City (Japan International Cooperation Agency, 2011). However, much pressure is placed on infrastructure, and facilities for walking and bicycling are inadequate to non-existent (Aslam et al., 2018).

Aslam et al. (2018) conducted a study to measure *bikeability* or *cyclability* in Lahore. The findings of the survey reveal differences in decisions about and perceptions of bicycling by comparing high-income countries and the global south. People in low-income countries use bicycles as a mode of travel because they have less income while, in high-income countries, cycling is not related to income status but to healthy lifestyle and active living. The plans reviewed in this study do not take into account the accessibility/mobility issues of the community and future travel demand requirements, which is a major gap in current plans.

The LUTMP identifies weak inter- and intra-departmental coordination, with no system in place to keep data up-to-date. There is also duplication in the existing data; the same data is

collected by different agencies and consultants and is not shared with other departments. In addition, the plan shows that the government is least interested in public transit projects like LRT, and the Transportation Planning and Engineering Agency (TEPA) did ad-hoc planning without considering the needs of the City.

Lahore's transportation system is burdened, and the government has failed to provide efficient and effective public transportation due to lack of planning and governance, corruption, inefficient land use, and conceiving of motorized vehicles as a status symbol (Masood et al., 2011). For instance, the plan refers to pedestrian and bicycle lanes but there are no design guidelines or strategies for how to implement these broad-level policies. Transportation impacts on people's health are not analyzed and disease burden is not identified.

4.6. Key informant interview findings: Integration of the healthy city concept in the City of Lahore

Interview participants were unaware that Pakistan is a WHO-EMRO Member State and that the WHO has primary health care programs in the region; none had heard of this before their interview. For instance, when asked about the WHO healthy city movement and its 11 criteria and guiding principles, one participant said: "I have heard about the WHO in health sector but the 11 healthy city criteria I do not know anything about them (Participant 2, private sector)." Another participant said: "No, I don't have any idea (Participant 4, public sector)." A second public sector participant was unaware of the concept but seemed open to considering how health and planning are linked:

We have never studied about this, not as a town planner. Now you have talked about this and have brought up this issue. I think there is need to study this relationship although we have never studied any kind of any planning issues that are happening in other countries, so I do not know what type of health. (Participant 1, public sector)

Although the recruited participants were not aware of the WHO healthy city movement, or of the WHO definition of health and its guidelines, when asked what they think healthy urban planning is they had their own definitions. None of the participants were aware of the definition and meaning of "healthy city" as defined by the WHO. Participant 1, for example, gave an interesting response that indicated a very different understanding of "healthy city" than the WHO definition:

No, I do not know about this. However, one thing we have planned to do, not started yet but we are coming to the computerized system of building plans approval process with the help of World Bank. I do not know if it is related to your thesis, but you talked about World Bank, so I remembered this. Ok you can take it in healthy perspective, as there are all paper records in our office so there is danger of fire, so this prevents such issues and we have installed the fire extinguishers. This was result of the previous fire in LDA plaza and they changed the commercial bylaws. Is it related to health? (Participant 1, public sector)

In another example, while Participant 2 had not heard of the WHO healthy city movement, they identified access to healthy food and healthcare as important parts of a healthy city:

Health is an important part of urban planning because if citizens do not get healthy food and the people are not given their basic need - food - then there is no planning for them. For instance, if a city lacks hospitals or if in a metropolis, there are so many hospitals and the satellite towns surrounding that metropolis has no facilities then it increase the population migration scope due to which the target population for which you have planned that metropolis is failed. When more people will be coming, then your urban planning will become weak and fail. Therefore, there is a strong relationship between health facilities and all this. (Participant 2, private sector)

Despite being unaware of WHO work on healthy cities, some participants spoke about the direct relationship that health and urban planning have. “Health and urban planning have foremost relationship. If your people are not healthy your cities cannot be healthy that is it.” (Participant 5, private sector)

Some participants responded that a healthy city means an active city where people are safe, have healthy food choices and the urban design of the city is healthy. Participant 9 summed up diverse mechanisms by which urban planning can affect health:

Urban planning is health, beauty and convenience. The principles of urban planning falls under this. Therefore, the healthier the environment is the better urban planning is. If there is no urban planning like in slums, where there are no roads, infrastructure, sanitation health will suffer because it is not planned creating health and sanitation issues, ponding issues creating mosquitoes, no parks creating lungs issues due to poor air quality. As Lahore is expanding due to urbanization, the sustainability has ended. Mortality rate is increasing, and all this is lack of planning. If there is planning, then there is no implementation. (Participant 9, private sector)

Overall, many of the participants were well aware that there is a connection between health and urban planning, and they acknowledged that healthy planning practices should be adopted and implemented.

4.7. Key Informant Interviews: Planners' perceptions of Lahore's current built environment and health issues

4.7.1 Urban Health Priorities in Lahore

Planners were also asked about the most important urban health issues facing Lahore's growing population. Four private- and three public-sector planners view current built environment issues as the result of water contamination and the increase in smog. The IMPL-2021 and the AMPL-2021 do not address this or suggest any policies for improving air pollution to tackle the smog issue.

Yeah right, first one and the most is I find the water issue. The drinking water issue is the foremost issue for me. Second, one would be the smog, which we experience each year in almost September to perhaps October or mid-November. Third, one would be high heat waves during mid- June and July. Fourth of course, the air pollution that we experience throughout the year. (Participant 5, private sector)

Participant 4 was of the view that pollution and de-vegetation due to urbanization created issues affecting urban health:

Usually I see the issue of pollution. Pollution is causing many health issues especially in Lahore due to rapid urbanization. Many people have come to Lahore and lived here, and Lahore is expanding quite a lot and due to this. There are issues of congestion and emissions from cars that cause very bad living environment, only one percent of Lahore is covered with trees, and as we see, Lahore is going through many environmental issues, so the health is certainly linked with environment. (Participant 4, public sector)

Another participant, thought seemingly unsure about its relevance to health, responded that de-vegetation was very problematic for Lahore's population:

Ok. First, I think the de-vegetation here. I do not know if this is related to the topic. Nevertheless, de-vegetation due to massive a very massive extension of Lahore. Uncontrollable extension, private scheme, too much development, road infrastructure and urban growth has led to de-vegetation. I do not know that is related to health or not but that is related to environment. (Participant 1, public sector)

One participant had a unique perspective and suggested that Lahore's built environments are unhealthy due to their contribution to poor mental health, which results from the fast lifestyle and urbanization. This has increased competition to achieve more, so people have no time to take care of themselves.

I think certainly, there are many such issues but the one that I would keep on the top would be the psychological depression we face by living in such urban areas of Pakistan. The second one would be you know fatigue related issues, back ache, migraines' these kinds of things because the life is very fast you don't get much time to look after yourself. (Participant 3, private sector)

Most participants viewed lung health as the most important health concern because smog is so prevalent in Lahore.

I think with the increase in the pollution and as Lahore is a Metropolis with increase in pollution, we can see the issue of smog due to which there is issues of breathing which are affecting the lungs" (Participant 5, private sector).

Diseases, yeah diseases. The de-vegetation is causing lot of smog issues in Lahore especially in October November extreme smog, the visibility is so high you cannot see anything" (Participant 1, public sector)

The issue of smog is not new for Lahore. For several years the City has been facing this issue but there have been no measures taken or policy changes, or amendments made to the master plan to address the issue.

4.7.2 Urban Health Equity

Participants were asked about the underserved population in Lahore. This question was asked because major health issues are faced by the underserved or low-income residents in the community and improving health equity is an important pillar of the healthy city strategies. Low-income people living in older, inner-city areas were identified as underserved people having fewer facilities and a low quality of life.

I think Walled City [the oldest, central part of the city] in my opinion. Maybe not much but what I have seen the living conditions are so poor similarly downtown area where roads infrastructure is available, but quality of life is so poor" (Participant 1, public sector).

Most of the underserved population is the lower and the middle income and they live in the centre of the city. Because city is developing on the southern side (Participant 8, public sector).

One participant recognized that household income and geography are related, but as a planner, framed their comment in terms of geography:

I would not rate it on the level of income I would rather rate it on geographical level. The older Lahore is mostly the northern part of city, that is under served in the capacity of both the income, the level of services the level of quality of life (Participant 3, private sector).

Although the master plan includes strategies for affordable housing in developing areas of Lahore, strategies that increase the quality of life in existing underserved residential areas are currently not included in planning policies.

4.7.3 Community involvement in Planning and the Promotion of Urban Health

Participants shared diverse opinions about the extent to which Lahore residents wanted to and were able to contribute to planning decisions to improve health. Eight of the ten participants held the view that a community should be involved when decisions are being made about their area of the City. “Right, yeah, definitely community should be involved because at the end of the day they are the one who are going to embrace it and use it for themselves” (Participant 7, private sector). Another participant reflected on the ubiquity of technology and how it offered new tools to engage with the community for decision-making.

Nowadays, even common person is so educated because of the IT advancement that if you ask anything, he can give you a proper answer. You cannot say now the human error. It is reduced nowadays. Therefore, you can rely on the information solely. So, ask the community willingness to participate and how they want to participate. Now we have so much educated people they are so much concerned about their health, their city’s health and are willing to spend extra on that” (Participant 3, private sector).

Two participants hold the view that the community should be involved but not too much because they can affect the decisions of the urban planners, who are experts in the field, and because community members want decisions to be in their favor.

When it comes to community and the preparation of the master plan, I would suggest that master plan should not be restrictive. One thing is that the community is not qualified always for instance, if you try to come up with strict land use planning for the community that might rather cause a public anarchy. In addition, when we talk about communities, they are always talking about their own benefits in some way. If you try to make policy in such a way that in certain community, where you are trying to give new road network on the land, then the owners of that land certainly be privileged, and their land prices will increase as compared to other ones. Therefore, the public might be agitating thinking you might be

giving some advantages to one part of the community and not the other. (Participant 3, private sector)

Community participation is a very important tool that should be used in planning but unfortunately, it is wrongly used. On case of Lahore, we can see this. LDA involve people through public notice and public hearing. However, people instead of bringing forward the real issues or giving input on that their focus is that their lands should be added to the residential zoning so that they can develop housing schemes on that. So, people think for themselves, with limited vision they give input. (Participant 6, public sector)

There was a difference of opinion, although the majority of respondents agree on having community involvement in the planning process because residents are directly affected by the decisions of the planners. Participants were also asked if they think the community was involved in the previous plan or will be involved in preparations for the new master plan. “No, no, nothing at all. I do not think there is such kind of involvement” (Participant 1, public sector).

All respondents hold the view that the community had not been involved in the planning stage and only Participant 8 emphasized that the community was involved after the draft of the master plan was prepared. Participant 8 also emphasized that the LDA is receiving input from different stakeholders for the preparation of the new master plan for 2040.

For 2040 master plan, we are at public and stakeholder consultation stage. We have involved [NAME] (Head of National College of Arts, Lahore and architect in private practice) (architect and environmental planner in private sector), urban unit, [NAME] (an environmentalist) sort of environmentalist which speak against the master plan and what we have done. (Participant 8, public sector)

The WHO recognizes the importance of community involvement in the planning-to-implementation stages. This is one of the most important principles of the healthy city concept. The literature highlights the finding that in Lahore, planners who participated in this study were not fully committed to public participation in plan development or implementation and tended to prefer a top-down approach to planning practice. The key informants highlighted this fact, noting that communities were not involved in the planning stage of the master plan, and that while some consultations are currently underway with experts in Lahore, broad community involvement is not a priority.

4.8. Key Informant Interviews: Planners’ perceptions of the capacity of Lahore’s existing master plan to promote healthy built environments

The majority of participants thought the existing policies of the master plan do not promote healthy built environments. “I don’t think anyone thought about this, they think to make roads and how to accommodate the people only because you know Lahore is growing so rapidly” (Participant 8, public sector).

Only one participant found that existing policies implicitly promote a healthy built environment.

There are two-three indirect inferences on how master plan would try to address health issues for example, when it comes to sort of separating land uses from each other like separating residential from industrial and proposing or restricting some development along the river Ravi. These kinds of indirect proposals might be related to somehow health considerations. (Participant 4, public sector)

It is important for the concept of city planning to include the principles for achieving a healthy urban plan. As noted above, the content analysis of Lahore’s plans found that some of the policies implicitly affected health but there were no policies that involved explicit considerations of public health. This was confirmed by the participants’ responses.

4.9. Key Informant Interviews: Existing policies—success or failure?

Planners in the public- and private-sector held the view that the existing policies have not been successfully followed mainly because there is a lack of implementation and flexibility in the plans. “I think the old master plan was not followed ultimately it was not successful. There were many issues in that master plan there were many issues regarding the implementation of the Master plan” (Participant 6, public sector). “These plans need to be flexible, need to be dynamic and need to allow future generations to decide whatever they want to do. It should not be that if somebody decided for you twenty years back and the technology is changing, and trends are changing even than you have to abide by what has been decided earlier” (Participant 9, private sector).

Only one urban planner from the private sector holds the view that the existing plan for 2021 is a very good master plan, and that poor implementation of its policies is the reason Lahore has expanded without proper management.

The one opinion on this, which we got from the stakeholders or when we accessed it ourselves, one thing comes forward that the master plan of 2021 was a very good master

plan. In that, our consultant was [NAME]. The studies were extensive. It gives Lahore growth direction. It also includes many detailed components. However, after that the implementation framework I mean there was lack of implementation. There was no coordination between different departments. (Participant 2, private sector)

Implementation is the final and most important stage for the success of any planning document. As mentioned in the literature review, planning should be flexible enough to support groups at each and every income level. The major reason for a plan's unsuccessful implementation seems to be its rigid policies.

4.9.1 Inter- and intra-departmental coordination

All interview participants, whether from the public or the private sector, held the view that inter- and intra-departmental coordination is very poor in Lahore. It is very difficult to get data, which results in duplication. They hold the view that if there is good coordination among the different departments, fewer resources will be used. "No, there is very little coordination between the departments. It took so much time to get the data" (Participant 1, public sector). "No, I cannot rate it. It is very difficult to get the data from different department. You have to go through proper channel, and it involves red-tapism" (Participant 2, private sector).

An interesting thing to note here is the opinion of one of the private-sector planners who previously worked in the public sector. He mentions that although coordination between the departments at local and regional levels is very poor, when it comes to the bigger projects, e.g. from the World Bank, every department is willing to coordinate and provide the required data.

While working in LDA I was working on a project, which was basically a project of World Bank. It is very interesting to note, that when we all went to meeting with other departments as focal person, whichever data that World Bank required was being provided to them. I mean the focal person from each department provided them the data it was not an issue at all. However, when it comes to normal issues and normal coordination, we all know that it is very poor, and people will not coordinate in efficient way. (Participant 5, private sector)

Participant 5 did not speculate as to why day-to-day coordination was so poor when it was clear that departments had the capacity to coordinate more efficiently (as was the case with the World Bank project).

4.10. Key Informant Interviews: Planners' perceptions of the facilitators of and barriers to the implementation of healthy policies in Lahore

4.10.1 What are the issues facing planners?

Participants identified various issues that they face working in the field. These issues include political pressure, pressure from the community or stakeholders to prepare plans that favor them, lack of coordination between different departments, and lack of funding. For instance, Participants 1 and 7 said, "I have a general point of view and I think political and lack of finances are the issues" (Participant 1, public sector); "Yes, finance issues are at national level" (Participant 7, public sector).

One participant held the view that funding is not a major issue but that the major issue is trust; people do not trust the political leadership regarding finances, and this ultimately results in funding and resource issues.

I will not say lack of finances as I told you before that being public, we are so concerned, and we are ready. If we have trust on political and governing body. Actually, we are dealing with the trust issues with our leader so there is a need to have changes in the political setup. Other issues are deemed useless in front of it" (Participant 4, public sector).

Similarly, urban planners feel political pressure to make decisions in favor of certain sectors.

As an urban planner, we make policies but when implementing those policies, we face political pressure. For instance, we have to ensure that there is a hospital in the development or special zone for health but more pressure on us is that to develop it as a housing scheme and make a project where we get more saleable area. (Participant 2, private sector)

Participants were facing political pressure and modernization, which they perceived to result in rigid policies, and impacts their decision making.

4.10.2 Willingness to Adopt Healthy City Planning Practices

Participants were willing to adopt healthy city planning but wanted those principles to be part of their education.

We have not studied about the health and urban planning issues. As an urban planner, we should be taught about it in our universities so that we would apply them in our profession. If we do not have the knowledge about healthy city how can we incorporate it?" (Participant 1, public sector).

In addition, planners hold the view that, although they are willing to adopt healthy city principles, more public knowledge from media sources is necessary because the perceptions of urban planners are old and are influenced by factors such as community participation and political will. “Yeah, I think highly, in this I would not say high and the perception is changed and why I am saying is that media is not saying about planning” (Participant 3, private sector).

4.10.3 Community challenges as a barrier to action

Almost all participants indicate that not having safe and secure access to parks and open spaces is a challenge facing communities, and one that creates a barrier to implementing healthy city policies and practices. According to participants, drug addicts frequent these spaces and women do not feel safe alone or with children, especially in low-income neighborhoods.

I will tell you about this, in our city, there is so much obesity in women the reason is that the women stay at home, they do not feel safe going outside for jogging or walking.... So, then it is just because of less decentralization, you have to go everywhere on car. If I have shopping places near my house, I will walk although people do not do that, but I will try. We have less concept of walking everyone has bike; everyone is adopted to this lifestyle. Heart disease, diabetes it due to all this and I think smog is also another big reason. (Participant 1, public sector)

Some participants point out that the City has few active recreation places like parks and playgrounds where people can go to exercise or walk. “Community is facing many challenges such as in the city the community parks and open spaces are less. There are fewer areas for exercise” (Participant 6, public sector). “If we talk about the exercise, the facilities are very rare because as I mentioned earlier that there are some good areas like Bagh e Jinnah and Shalimar, but these are very rare to mention” (Participant 9, private sector).

4.11. Key Informant Interviews: Planners’ perceptions of the future of healthy city planning policies

4.11.1 Existing city-betterment projects

One participant mentioned health-related initiatives in the City, which are done at the project level. These projects include façade improvement in commercial areas and convincing commercial unions to rebuild broken sidewalks in front of the shops in Liberty Market (Participant 5).

There are other important projects mentioned by participants:

I say that the good developers like Sukh Chain housing scheme and Bahria housing scheme made more parks and parks should be where people feel safe without drug addicts. The green areas should be focused more because health is directly or indirectly related to it” (Participant 10, public sector).

Participants also referred to small projects to improve residents’ quality of life such as mandatory tree planting in new private housing schemes that require homebuilders to plant two trees in front of each house:

I think as the Lahore is developing on its southern side where we are approving the housing schemes there the development is low density and with proper standards. So, their health facilities and open spaces are present according to the standards” (Participant 2, private sector).

4.11.2 Including healthy policies in future policies and plans

All participants were optimistic about the explicit inclusion of healthy city policies in Lahore’s future master plan, for 2040. Participants were of the opinion that, if facilities for health and education were distributed equally throughout the province, the issues of urban sprawl and migration would be controlled because people would not need to migrate to the bigger cities, like Lahore, to get medical services or an education: “The only thing is...that a few months ago, the government has planned to decentralize everything. Therefore, I think that it will contribute to the health of Lahore by controlling urban sprawl and migration” (Participant 1, public sector).

Participants note that the rising issues of smog and water contamination are now gaining importance due to various social media campaigns. Therefore, the planners are hopeful that if the government realizes these issues and identifies the health impacts of policies and proposals, they will be included in the master plan for 2040:

In the future master plan, I think health will be included because health is now a burning issue because of the smog in Lahore and the rising water issue. The social media campaigns have made it a burning issue” (Participant 8, public sector); “It should be realized at the higher level until unless nothing can be done ” (Participant 3, private sector).

Yeah perhaps, your study would be a guideline for that. Because I, until now, I don’t think they are even considering this point I mean I am talking with you I also, of-course it remains in the mind indirectly, but directly thinking in the mind the city and to make it related with health and health and urban planning that is quite important. (Participant 6, public sector)

One of the participants from the public sector mentions that, in preparing the new plan for Lahore, although health is implicitly covered by their vision statement there is no explicit statement measuring the health outcomes of the policies.

4.11.3 Ideal future: Lahore's built environment

The following are the major suggestions provided by participants for the betterment of Lahore's built environment, although some participants did not provide any suggestions:

I think I will be happy if you include my point is decentralization and de-vegetation should stop for healthy city and healthy people. Promote people to go to parks and do physical activity" (Participant 1, public sector); Master plan is itself a policy document and if health is more focused in that I think, it will yield good results" (Participant 7, public sector).

4.12. Conclusion

The following key issues are identified in Lahore's master plans: infrastructure deficiencies, land management, housing, traffic and transportation, sustainability of the living environment, urban governance and finances (see Appendix-I for detailed themes and findings). However, in particular, strategies for creating opportunities in active transportation through land use and infrastructure policies; access to parks and recreation; access to the education, health and employment sectors; and access to healthy food are some of the attributes of a healthy city that are missing in planning policies.

The WHO's healthy city principles focus on inter- and intra-departmental coordination and the involvement of the general public in plan preparation. As discussed above, it also focusses on explicitly incorporating health and health planning into urban plans for cities. This analysis of Lahore's master plans and the key informant interview responses indicate that Lahore's master plans lack all of these aspects.

5. Discussion

This research aims to determine how the WHO's Healthy Cities programme has been adopted in the global south using Lahore, Pakistan, for a case study. It focusses on the distinctions between the global south and the global north in urban planning by using healthy cities principles to measure planning and Lahore as a case study site. The following chapter summarizes key findings and discusses their relevance in planning healthy communities.

5.1 Summary of key research findings

Using the eight urban policy systems developed by Giles-Corti et al. (2016), a literature review, policy content analysis, and semi-structured interviews with urban planners from both the public and private sectors, this study examines the perceptions of key informants concerning Lahore's health and urban planning. The literature highlights differences in the urban planning practices of the global south versus those of the global north. Planning policies and practices used in the global north cannot be implemented directly in cities of the global south due to differences between the regions. The WHO provides a solution to this issue in the form of its healthy city guidelines. These guidelines can be adopted on a city-by-city basis; they are flexible enough to be integrated into city development plans/policies or they can be implemented in stand-alone projects to make cities more liveable places.

The WHO considers health to be more than the absence of disease and promotes health in different urban policies. Thus, it encourages inter-sectoral coordination and incorporating public health into existing plans, or preparing a separate health plan (WHO, 1999). Findings from the content analysis of the case study indicate that some healthy community principles are found in the LUTMP-2030 and some sections of the IMPL-2021, specifically the need to promote public transportation and encourage walking; however, these ideas are implicit but are not explicitly mentioned. In addition, strategies for achieving these goals are not mentioned anywhere in the plan. For instance, policies promoting bicycle infrastructure or sidewalks are not included.

There are no indicators in the plans for achieving mixed-use or compact urban development or to increase the quality of life through various urban design initiatives. The concept of safe streets, parks and playgrounds is also missing from the plans.

Although health and the built environment are interrelated and urban planners in the global north recognized this long ago, the relationship is still not considered in planning and policy making in many countries in the global south. The WHO Healthy Cities movement began in

Europe and spread across the globe; there are some countries in the global south that have implemented WHO guidelines to achieve the status of healthy city. Findings from content analysis and key informant interviews show that, in Lahore, major planning efforts focus on the transportation sector due to rapid urbanization. Thus, Giles-Corti and colleague's (2016) eight urban policy systems are used as the theoretical framework for this study. They are tied to attributes of an urban healthy city that provide guidelines for Lahore to face the issues of urbanization and non-communicable diseases.

Understanding Lahore's current situation and learning about its existing master plans underlines the relationship between urban health and the City's built environment. This study shows that including healthy city policies in a master plan or creating a separate health plan are essential to providing a healthy living environment for residents. Health is an integral part of all sectors of urban planning: transportation, social health, open spaces and recreation, housing, education, employment, and security and safety.

Semi-structured interviews were designed to assess the barriers to and facilitators of healthy city planning. Results from the key informant surveys reveal similar perspectives regarding the current urban environment and the capacity of the master plan to facilitate a healthy built environment. The planners interviewed stated that health is not explicitly mentioned in Lahore's master plan. One planner indicated that the City's urban planners are beginning to realize that health and the built environment are closely related; many small projects such as planting trees, upgrading facades and rehabilitating sidewalks have been started in one or two commercial areas of Lahore.

All participants (except one) expressed the view that the IMPL-2021 lacked public consultation and focusses only on outdated data, and therefore is not a good planning document. One planner said the master plan is a very good document, but that it has not been implemented faithfully due to lacks in funding, workforce and coordination between different departments. The major factor affecting poor implementation was perceived to be limited coordination between different departments. For instance, the LDA's planning jurisdiction is given to the Lahore Division, but its control is limited to Lahore City. Therefore, the LDA has developed master plans and zoning for Sheikupura, Kasur and Nanakana Sahib but the individual buildings and projects in these areas are approved by the local town/Tehsil Municipal Authorities (TMAs). There are coordination problems between these departments. TMAs sometimes challenge the

jurisdiction of the LDA, and the LDA challenges the jurisdiction of the TMA. In addition, the LDA has not set up sub-offices in Sheikupura, Kasur and Nanakana Sahib; thus, the LDA manages these three districts as well as the Lahore District.

Planners in the public and private sectors believed that including healthy policies in the master plan is the key to a healthy city. They define a *healthy city* as an active city with a quality lifestyle. However, the IMPL-2021 lacks healthy policies regarding bicycle lanes, pedestrians, disease control, healthy food and water. The planners think that master plan policies strictly rooted in land use and zoning have a limited capacity to promote a healthy lifestyle.

Not all of the planners were aware of the characteristics or qualities of a healthy city as defined by the WHO. They did not know about any of the WHO initiatives in Pakistan or the WHO's definition of health. The reason given by one of them is that the concept of a healthy city was never introduced during their education. Thus, healthy city concepts are not represented— theoretically or practically—in the policies of their master plans.

Participants agree that Lahore's plans and policies are not healthy and, therefore, that the metropolis is facing issues concerning non-communicable disease, haphazard growth and poor living conditions. These are attributable to rapid and uncontrolled urbanization resulting from the lack of implementation mechanisms and coordination between different departments. These planners believe that this research will introduce a new concept of healthy living to Lahore's urban planners, for every urban strategy.

5.1.1. Viability of the WHO's healthy city guidelines to increase Lahore's quality of life

This study's findings indicate that the WHO's healthy city guidelines could prove to be a viable tool for promoting healthy built environments in Lahore. They can guide urban planners based on experiences from the global north so that they can adopt those applicable to Lahore. For instance, in developed countries of the global north, people use bicycles because they are considered an active mode of transportation; in the global south and in cities like Lahore, bicycles are a mode of travel used by low-income people because they cannot afford cars (Aslam et al., 2016).

Although bicycles are used for different purposes in the global north and global south, there is still a need to provide bicycle lanes in the City. In addition, because the LUTMP-2030 indicates that the major portion of transportation will be needed for bicyclists, motorcyclists and

rickshaws, there should be proper lanes for all modes of transport when expanding the City's roads.

Lahore's poor urban design, haphazard development and rapid urbanization also reflect the lack of attention given to educating urban planners about the relationship between health and built environments. Planners are aware that the excessive conversion of agricultural land into residential schemes or commercial areas is not good for the health of a city—but because of political pressure, they approve such decisions. The WHO discourages such practices and suggests that healthy city governments need to support healthy decisions. Urban planners point out that communities are concerned about the City's water and air quality. Therefore, city planners, city council members and other local government employees are beginning to promote safety through planning and design (Austin & Inglis, 1993).

Some of the participants thought that the health aspects of the IMPL-2021 effectively explains Lahore's health-sector requirements. However, if we compare it to the WHO guidelines or to what Giles-Corti and colleagues' (2016) framework suggests, health considerations (which, in the 2021 plan, consist of the number of hospitals and their future requirements) are broader than only the healthcare system. Health also involves how citizens safely access routes to hospitals, whether there is proper signage, whether requirements for people with special needs are met, and the social determinants of health. Even more broadly, the WHO asserts that health enables a life without limitations, adoption of healthy habits and changes for sustainable living (WHO, 2019).

In addition, reduction in disease along with the promotion of a healthy lifestyle, active coordination between different departments, and the political will to provide adequate health and social measures are also required to achieve healthy city status (WHO-Constitution, 2019). These things need to be recognized and incorporated by Lahore's urban planners when they prepare a new master plan for the City.

Specifically, the WHO focuses on equality, equal employment opportunities and equal access to a quality life for the people in a country with low-income status (WHO-Constitution, 2019). The root cause of unhealthy neighborhoods, slums and squatter settlements in Lahore is rapid urbanization (Zaman, 2012). Water depletion, contamination, illegal connections and waste are some of the most important issues facing the City (Wahid, 2015). It is essential to manage this necessity of life and to avoid water contamination to stop the spread of waterborne diseases

(Islam, 2016). In terms of trade and economics, the City of Lahore must ensure that equitable opportunities are provided for small and large traders (Islam, 2016).

Community involvement is a valuable tool that helps address the concerns of people (Toor, et al., 2014), removes burdens from government departments, ensures financial accountability and efficiency, and is most suitable for addressing local needs (Islam, 2016). These are all issues that can be resolved by following the WHO guidelines or the examples of successful healthy cities. Through education, urban planners and communities will be made aware of how they can contribute to their environment.

5.2 Limitations/gaps

It is important to note the limitations of this research. The IMPL-2021 and LUTMP-2030 are both considered outdated plans due to rapid change to the urban form of Lahore as a result of urbanization; however, they are still the current guiding documents for planning. Further, it is a limitation of the plans (not of this research) that they do not cover the entire area of Lahore and do not include regional/metropolitan information.

There are some limitations associated with the eight urban policy systems identified by Giles-Corti and colleagues (2016). For example, there are aspects not explicitly included such as the environment and food security.

Moreover, this research only focusses on urban planners, who are not necessarily the ones making final decisions for the City. Political representatives also make final decisions and they could have interesting perspectives, too.

5.3 Future directions for research

It is important to determine whether and how the professionals/urban planners consider these planning documents successes or failures, and whether and on what grounds the new master plan will involve public consultation and inter- and intra-departmental coordination. Due to the lack of research exploring healthy cities in the global south and the connection of health to the built environment in low- and middle-income countries, there are still areas that should be investigated to build a more holistic understanding of the concept of healthy built environments in the global south. These could include interviews with planners and policy-makers in different sized cities in the global south that are undergoing rapid urbanization.

6 Conclusion and Recommendations

6.1 Introduction

The main purpose of this study is to answer three guiding research questions: In the existing literature, to what extent do healthy city recommendations vary by context: global north versus global south? To what extent and how does the City of Lahore include health as a consideration in existing municipal policies and plans? What are the barriers to and facilitators of the adoption of healthy city policies in the City of Lahore? This chapter of the thesis provides recommendations and implications for policy makers and planners as well as concluding remarks for future studies.

6.2 Recommendations for planners and policy makers

6.2.1. Theoretical recommendations

Built environments in urban areas are the “planned and structured aspects of our surroundings” that include buildings, transportation and recreational areas (Williams, 2013); urban health depends on how the built environment affects the health of the people (Galea & Vlahov, 2005). As a major outcome of the continuous increase in population, urban sprawl, poverty and industrialization, health complications/issues in the global south are mounting and becoming harder to solve. On the other hand, in the global north—with growing significance and linked to urban public health problems such as a rise in chronic diseases—there is growing recognition that built environments vitally influence the health and well-being of people (Pilkington, Grant & Orme, 2008). Participants’ responses and the results of this study are not generalizable to other cities, but the comparative analysis of the global south and global north can be helpful for future studies, particularly in cities of the global south.

Lahore’s urban environment represents a mixture of issues such as non-communicable disease, rapid urbanization and traffic congestion; the key solution to these issues is to reduce their negative effects (Giles-Corti et al., 2016).

Determining a viable solution for Lahore’s urban problems is a complex research issue, given the missing connection to and lack of knowledge about the relationship between health and urban planning. Although the key informants who participated in interviews had 5 to 30 years of

experience in the field of urban planning, they do not represent the opinions of all urban planners.

Given that this research focuses on an analysis of Lahore's master plan and on the opinions of key informants who identify its limitations concerning a healthy master plan, future research could explore in greater detail issues relating to health and the eight urban planning policy interventions. For instance, there is the need for a detailed analysis of the relationship between healthy urban planning and education that includes calculating the required number of future educational institutions and schools, as well as safe walking or bicycling access to school routes. In addition, education creates awareness, reduces poverty, provides information about disease, and helps people develop to their full potential (WHO, 2019). Therefore, planners must consider each and every aspect of urban policy system that help a city function.

6.2.2. Practical recommendations

This study pays particular attention to planning principles to ensure that the findings provide practical recommendations that can be used in the work of urban planners in Lahore's policy and implementation sectors. The following sections provide recommendations for urban planners and decision makers that should be kept in mind while Lahore is preparing to develop its new master plan for 2040. These recommendations highlight the interdisciplinary nature of urban planning and contribute to solutions that target community betterment.

1. Education and awareness programs for communities and professionals

Findings from the document analysis reveal that health is not explicitly mentioned in the urban plans and policies for the City. The key informants (urban planners) confirmed this as well; they have no knowledge of healthy urban planning or the Healthy Cities movement, even though the WHO does work in Pakistan and its major focus is on primary health care (WHO-EMRO, 2019).

Most of the urban planners taking part in the interviews stated that they do not know about the WHO Healthy Cities movement. Therefore, it would be important to make them aware of healthy city principles. For instance, Participant 1 mentioned that planners are not taught about healthy city principles for healthy urban planning regarding educational institutions. This lack of information about the WHO Healthy Cities movement was consistent for all study participants.

It is important to introduce the public health and built environment relationship to the curriculum taught in the planning education. The WHO healthy city movement and its guidelines should also be included to make them aware of the planner's role, principle of healthy planning and policies for making the environment healthy.

Participants stated that they want to learn about these principles; Participants 4 and 5 even want to take steps to introduce university students to the healthy city concept. This makes sense as there is willingness to learn. The Development Authority and private organizations can also partner to raise awareness through educational programs, workshops and corporate training sessions.

These programs can be hosted by and located in the Development Authority offices, community centres or at universities. Other initiatives include; training sessions for existing professionals. This can be done by arranging small seminars which includes the articles related to WHO healthy city movement particularly in the global south and East Mediterranean Region. The WHO official website is a useful resource with information about the concepts and guidelines provided by WHO to make cities healthy. This course or awareness program can provide information concerning the relationship between health and built environments in different urban policy sectors, which will make this a more acceptable way of practicing urban planning for those in the field.

2. Health priorities for Lahore

Urban planning is interdisciplinary in nature. Therefore, it is important that planning departments (both public and private) and the health sector work together to devise policies for an urban plan. Health departments can provide information about pressing health and environmental issues in Lahore; planners can then make policies for different sectors by keeping the health aspects of each in mind.

The value of the WHO's healthy city guidelines is that they can be molded according to the needs of each city—they are not rigid. Thus, there should be an official plan that includes healthy policies or a separate health plan for each city. For Lahore—as part of the global south where there is a lack of funding and resources—it is time to recognize the importance of introducing healthy policies because the City is at the vision-building stage in preparation for its new master plan for 2040. There is no increase in associated resources, but planning will help reduce data

duplication, identify important issues at an early stage, and develop a new health plan as part of the City's future master plan for 2040.

The first step is therefore, to identify the key health issue. Instead of allocating the major chunk of master plan budget to the transportation sector policies, it is important to first highlight the public health needs of the city. From the document analysis and key informant interviews it is revealed that the most pressing issue faced by Lahore is smog causing respiratory issues therefore, it comes as a first priority health issue to be addressed in the future plans. The policies in the transportation sector for instance, should ensure that the air quality should not be deteriorated. Active transportation, such as safe cycling and pedestrian routes comes second. The third issue would be the issue of safe and clean drinking water to decrease the burden of non-communicable diseases such as diarrhea.

3. Required policy interventions and design elements

Within the planning context, informants point out that the main problem is political influence on planning decisions which lies beyond the powers of the planners. There is a lack of transparency in making policies. In addition, the boundaries of the area constituting Lahore City were increased in 2016 but there is no planning policy document for that additional area. There is only a newspaper notification and a new land use plan. The new plan should indicate all areas included under the local Development Authority and should not be merely a land use map; it should be a complete policy document.

The city's master plan is a traditional planning document which is affecting the urban rich and urban poor in different ways. For rich, it became a tool to maintain their properties at a strategic location and it is making the urban poor more marginalized. This is because the planners have not realized that planning is much more than physical planning and they should adopt Contextual planning instead of Colonial planning with innovative and inclusive plans.

Concerning policy interventions, health should be explicitly mentioned in future plans and documents. It is important to consider explicit healthy policies when thinking about different urban strategies like transportation, housing, employment, parks and recreation, public safety, social health, economics etc. This can be done by brainstorming whether the proposed policies can give explicit health outcomes as proposed by Giles Corti et.al (2016) and WHO. It is not necessary that the healthy policies have a separate chapter in the future plans, but it can be woven throughout the plan. For instance, instead of promoting a car-friendly environment by

increasing the size of roads as a solution for congestion, policies should be based on incorporating an active lifestyle by improving sidewalks and pedestrian crossing indicators and giving pedestrians the right to cross the road first. Similarly, safe driving should be promoted through proper driver-education planning, as mentioned in the LUTMP-2030.

There should be easy-to-read, proper markings and signage near hospitals and schools. Parks and open spaces should be safe—an important concern identified by the participants in the informant interviews. This can be done by adding proper security features to park gates.

The urban design of the City also contributes to a healthy environment. The underserved population areas are identified as Lahore's older, inner-city areas. There should be urban renewal projects that protect historical buildings and restore inner-city areas. As well, quality of life in slums and squatter settlements can be improved through education and awareness programs for residents, which should include information about waste disposal and street cleaning programs.

As noted in the interviews, developers are often opposed to health-promoting practices, in part due to the cost of sidewalk construction and sustainable features. This could be overcome by educating developers about profitable development practices or by providing incentives. This can also be done, for example, by providing development cost discounts such as those offered in Ontario, Canada, for new industrial and commercial developments, which helped reduce greenhouse gas emissions and the cost of building construction and maintenance (MMAH & OPPI, 2009)

4. Healthy planning tools as a catalyst for healthy built environments

Healthy communities and urban planning policies are interconnected (Barton & Tsourou, 2000). Therefore, explicit incorporation of health and quality of life elements as some of the goals and objectives of the City's planning documents will help gain support from a community and its related stakeholders.

It is important to establish the means to measure parameters or health impacts/outcomes of development projects or implement monitoring indicators. For instance, Health Impact Assessment (HIA) is an important tool—defined by the WHO as “a combination of procedures, methods and tools by which a policy, program or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population”—that is receiving considerable attention in planning and public health circles (Forsyth et al., 2010). Urban planners in Lahore should consider adopting this tool in collaboration with health

professionals, helping to better understand the dimension of human health in urban planning (Wood, 2012).

5. Implementation, monitoring and evaluation

Participants in the key informant interviews indicate that there is always a disagreement over jurisdiction between the municipality and the Development Authority. With the introduction of a new plan for the City, this issue should be resolved through the proper demarcation of boundaries so that the new plan can be implemented successfully.

It is important that small incremental steps be taken instead of a traditional master plan overhaul. This would be more effective because there are issues of less resources and corruption. The small incremental steps will take some time to change the current condition of the city but they can yield long term impacts and their implementation, monitoring and evaluation will be easier.

6. Ideal Structure for planning in Lahore

The existing policies in Lahore reflect top-down policy and planning framework. This approach is not enough to address the complex and wicked problems faced by the city. In Lahore, the feasible/pragmatic planning structure would be the introduction of a combination of top down and bottom up policy approaches. This is because ideal scenarios recommended above may not be possible because of lack of resources or weak departmental coordination. This combination of top down and bottom up approach (countercurrent planning) will be the best option in the existing scenario as the existing plans, legislations and policies are not responsive and nimble enough- or up to the job.

This countercurrent planning or countercurrent method will enable an efficient and target oriented implementation of the policies and ensure that all the concerned departments (central and decentral) and stakeholders are actively involved in the plan making process

6.3. Conclusion

Policies and strategies comprising Lahore`s master plans lack explicit healthy city principles. It is important to note that the current master plan, IMPL-2021, was amended in 2016 when the LDA`s jurisdiction was expanded to the Division level because the districts of Kasur, Nanakana Sahib and Sheikhpura were added. The amended IMPL-2021 (AMPL-2021) map was the only thing that was upgraded at that time, with no changes made to the policy document. Because

Lahore is in the process of preparing its new master plan for 2040, it is now important to critically examine policies that can guide healthy development.

It is also important to note, that as per the WHO healthy city guidelines, there is a flexibility that cities around the world can make the healthy plans as per their own priority health issues. Lahore is a typical global south city and these recommendations can be generalized to the rapidly changing cities of the global south which are also facing similar issues of urbanization, weak departmental coordination, lack of education and awareness and less resources.

This research explore that the global south should not replicate the policies and designs from the global north but must take into account their own current and projected conditions. It is important that a countercurrent planning method is used to ensure that the policies and plans are all-inclusive. The policies are not *one-size fit all*, the importance is the need and willingness to accept a workable design that is adaptable to the city needs.

Current planning in the global south is focussed on the physical planning which was found to be the case in the selected case study of Lahore too. It is important that the planning focus be shifted towards the acceptance of explicit relationship of health and built environment. This thesis, therefore, advocates that the planners, decision makers and the stakeholders of Lahore must learn from the successful healthy city approaches from the global north as well as the global south to have an effective and healthy planning of the city.

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Appendices

Appendix A: Keywords for search in different databases

Research question 1:	Databases	KEYWORDS
1.	PROQUEST	(health OR non-communicable OR disease) AND (built environment OR land use) AND (developed countries OR “first world countries OR “global north” OR “Third World countries” OR “developing countries “global south” OR “income countries” AND “WHO healthy cities movement”
2.	GOOGLE SCHOLAR	<ol style="list-style-type: none"> 1. Health and built environment in developing and developed countries 2. Healthy cities in global south 3. Healthy cities in global north 4. WHO Healthy cities movement 5. Association of health and built environment 6. Master Plans in Lahore 7. Master Plan implementation in Lahore
3.	PUBMED	<ol style="list-style-type: none"> 1. (Health or non-communicable diseases) AND (built environment or land-use) AND (global north or global south or developing countries or developed countries or income countries or third world countries or first world countries) 2. (WHO or healthy city or healthy city movement)

4.	SCOPUS	“health OR disease AND “built environment OR land use” AND “developed” OR “developing” OR “third world” OR “first world” OR “global north” OR “global south” OR “income countries” “WHO AND healthy AND city”
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Appendix B: Email Recruitment Script

Hello,

This email is being sent out on behalf of the researchers.

My name is *Maha Safwan* and I am a MA Planning student working under the supervisions of *Dr. Leia Minaker* in the *School of Planning*, Faculty of Environment at the University of Waterloo, Canada. The reason that I am contacting you is that we are conducting a research study for my thesis to address the healthy urban planning in the city of Lahore. We are currently seeking volunteer urban planners from public and private sector planning and development organizations in Lahore as participants in this study.

Participation in this study involves telephone or skype interviews and answering open ended questions related to health and urban planning practices in Lahore. The interviews will be audio-recorded and later transcribed. Participation in this study would take approximately 1 hour and fifteen minutes of your time. You can withdraw your data (30 days) before the thesis is submitted. Please remember that any data pertaining to your identity will be kept confidential. Once all the data are collected and analyzed for this project, I plan on sharing this information with the research community through seminars, conferences, presentations, and journal articles. If you are interested in receiving more information regarding the results of this study, or would like a summary of the results, please provide your email address, and when the study is completed, anticipated by August 31st, 2019. I will send you the information. In the meantime, if you have any questions about the study, please do not hesitate to contact me by email or telephone as noted below.

If participants are interested in the results of the study, they can obtain a summary of the findings by directly contacting the student researcher. The contact information will be provided to participants in the feedback/appreciation letter.

I would like to assure you that the study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee.

However, the final decision about participation is yours.

The following time slots are available to participate in this study.

(List of available times)

If you are interested in participating, please contact me at (*msafwan@uwaterloo.ca*) and list your top three choices for when you would like to participate from the list above. I will then send a confirmation email indicating that you have been signed up for one of those times. If you have to cancel your appointment, please email me at (*msafwan@uwaterloo.ca*).

Sincerely,

(Maha Safwan)

Appendix C: Consent Form

Hello (*insert participant's name*):

This is an invitation to consider participating in a research study I am conducting as part of my master's degree in the School of Planning at the University of Waterloo, Canada under the supervision of Dr. *Leia Minaker*. I would like to provide you with more information about this project and what your involvement would entail if you decide to take part.

The title of study is: Building healthy cities in global south; a case study of the City of Lahore. The understanding of how urban environments affect health outcomes and can produce health benefits is an urgent priority. It is an undeniable fact that the humans have direct interaction with their surrounding environment. Healthy cities cannot be developed without incorporating the healthy urban planning practices. With the growing interest in the concepts of healthy urban planning, local and national governments, and international organizations like WHO developed many recommendations/policies to improve the public health by providing healthy city guidelines. Pakistan is a low-middle-income country, and a WHO member state in the East Mediterranean Region. According to WHO-East Mediterranean Region healthy city guidelines (2007), rapid urbanization contributes to a substantial burden of health issues in the Region. The city of Lahore is also facing urbanization and its related consequences like chronic diseases, decrease in quality of living and socio-economic status. The purpose of this study, therefore is to explore perspectives of barriers and facilitators to healthy city policies being adopted in the City of Lahore.

This study will focus on the issues of the city of Lahore and how it can incorporate the healthy city guidelines by World Health Organization in its future plans and policies in order to promise a healthy lifestyle to the public. As urban planners are the major decision makers and stakeholders in the master plan making process, I would like to include you as best suited to speak on the various issues such as, health related issues in the city of Lahore and how current city planning policies are dealing with them.

Participation in this study is voluntary. It will involve a skype or telephone interview of approximately *one hour and fifteen minutes* in length to take place in a mutually agreed upon time. You will be asked to provide demographic information such as gender and qualification. This information will be used to describe the study sample. You may decline to answer any of the interview questions if you so wish. Further, you may decide to withdraw from this study at

any time without any negative consequences by advising the researcher. With your permission, the interview will be audio recorded to facilitate collection of information, and later transcribed for analysis. Shortly after the interview has been completed, I will send you a copy of the transcript to give you an opportunity to confirm the accuracy of our conversation and to add or clarify any points that you wish. Your identity will remain confidential. Your name will not appear in any thesis or report resulting from this study, however, with your permission anonymous quotations may be used. There are 15 urban planners participating in the study. As the informant identity will be kept anonymous, even from the individuals participating in the study, there is no risks to the participants. and Data collected during this study will be retained for a minimum of *one year* in a locked office in my supervisor's lab. Only researchers associated with this project will have access. There are no known or anticipated risks to you as a participant in this study. If you choose to use skype please note that When information is transmitted over the internet privacy cannot be guaranteed. There is always a risk your responses may be intercepted by a third party (e.g. government agencies, hackers). University of Waterloo researchers will not collect or use internet protocol (IP) addresses or other information which could link your participation to your computer or electronic device without first informing you.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE#40881). If you have questions for the Committee contact the Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

For all other questions or if you would like additional information to assist you in reaching a decision about participation, please contact me at by email at (*msafwan@uwaterloo.ca*). You can also contact my supervisor, Professor *Leia Minaker* at 519-888-4567 ext. *35615* or email (*lminaker@uwaterloo.ca*).

I hope that the results of my study may contribute for benefit to the broader research community. The data collected during interviews may provide a better understanding of the appropriate direction of future urban area plans and development in the City of Lahore and will also provide information and guidelines necessary to make it a healthy city.

I very much look forward to speaking with you and thank you in advance for your assistance in this project.

Yours Sincerely,

Student Investigator

CONSENT FORM

By agreeing to participate in this study, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE#40881). If you have questions for the Committee contact the Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

For all other questions contact [Maha Safwan at 289-971-7248].

With full knowledge of all foregoing, do you agree, to participate in this study.

YES NO

Do you agree to have my interview audio recorded?

YES NO

Do you agree to the use of anonymous quotations in any thesis or publication that comes of this research?

YES NO

Appendix D: Participant Feedback and Appreciation Letter

University of Waterloo

Date:

Dear (*Insert Name of Participant*),

I would like to thank you for your participation in this study entitled **Building healthy cities in the global south: A Case Study of the City of Lahore**. As a reminder, the purpose of this study is to develop recommendations for healthy urban planning for the city of Lahore, Pakistan.

The data collected during interviews may contribute to a better understanding of the appropriate direction of future master plan preparation and development in the City of Lahore and provide information and guidelines necessary to make it a healthy city.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE#40881). If you have questions for the Committee contact the Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

For all other questions contact [Student Researcher: Maha Safwan at [msafwan@uwaterloo.ca] or [Primary Researcher: Dr. Leia Minaker at 519-888-4567 ext. 35615].

Please remember that any data pertaining to your identity will be kept confidential. Once all the data are collected and analyzed for this project, I plan on sharing this information with the research community through seminars, conferences, presentations, and journal articles. If you are interested in receiving more information regarding the results of this study, or would like a summary of the results, please provide your email address, and when the study is completed, anticipated by August 31st, 2019. I will send you the information. In the meantime, if you have any questions about the study, please do not hesitate to contact me by email or telephone as noted below.

Maha Safwan

School of Planning

Faculty of Environment

msafwan@uwaterloo.ca

Appendix E: Key Informant Interview Questionnaire

This questionnaire has been tested for length. It will take you not more than one hour and fifteen minutes to complete these questions. This section asks general questions about your background and what urban planning department you report to. **Note:** Your identity WILL NOT be associated with your responses.

1. What department are you going to report on for this survey?

2. What is your job designation and responsibilities?

3. Are you:

- Female
- Male
- other

4. Have you completed the urban studies? If so, what is the highest level that you have completed?

- Bachelor's degree
- Master's degree
- Not attended Planning School
- Other (please specify)

5. Please provide your work settings by marking appropriate box.

- Urban
- Rural
- Both

6. How long you have been working in this department?

- <3 years
- 3-5 years
- >5 years

Health and Urban Planning issues

1. As an urban planner, in your view what are the top 5 health issues you see in your community?

1. Out of the health issues mentioned, in your opinion, which one is most significant?

2a. Reason for selection:

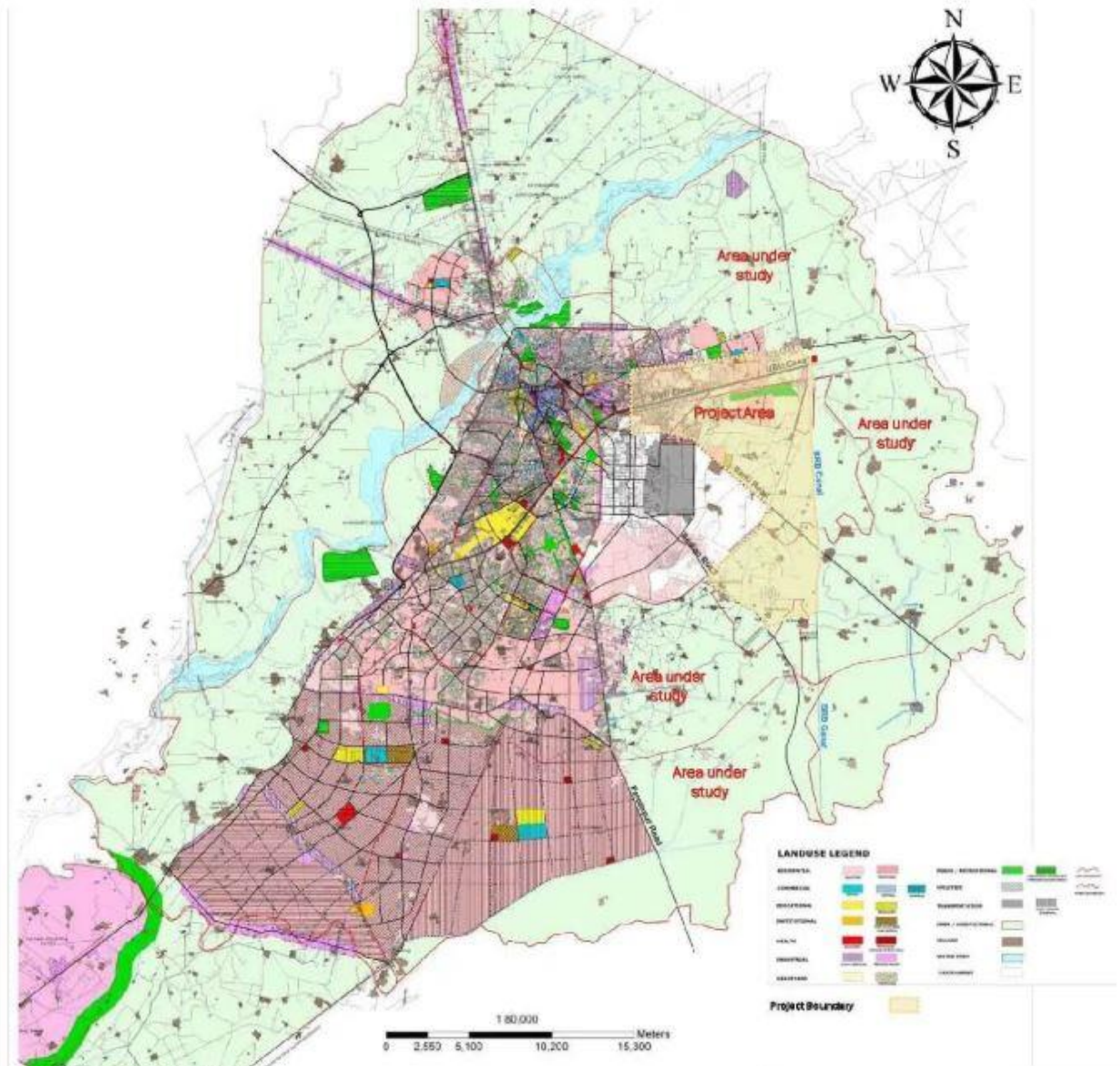
3. Of the above-mentioned issues, which issues your department are dealing/addressing through urban policies?
4. Of the issues that you deem important and not addressed, why do you believe they are not being considered?
5. To help us better understand how urban master plan policies are made, can you explain to me generally how a policy is brought forward to the board and then acted on?
6. Do you consider Integrated Master Plan of Lahore -2021 (IMPL-2021) a successful master plan?
7. If yes, why?
8. If no? What have you found to be the major pitfall with regards to implementing urban policies?
9. Do the policies in IMPL-2021 address these health issues? If so, which one and how?
10. What do you know about the relationship of health and urban planning?
11. Do you think community involvement is important while preparing any plan or policy?
 - 12a. If yes, why? also briefly explain how you can involve the community?
12. Who/Where do you get your information from regarding community issues? (i.e., TV, newspaper, radio, departmental surveys and reports, other professional orgs.,)
13. Do you know about the WHO healthy city movement and its criteria's?
14. Does your department has taken any initiative regarding the health of the community?
 - 15a. If yes, Specify:
15. What do you think are the most important attributes of a healthy city? For instance, what does healthy transportation look like to you? Or what does healthy urban design look like to you?
16. Which population in city of Lahore is underserved? For instance, do you think low income/poor or immigrants are more underserved? And why?
17. What challenges do people in the community face in trying to maintain healthy lifestyles like exercising and eating healthy and/or trying to manage chronic conditions like diabetes or heart disease?
18. In your opinion, what is being done well in the community in terms of health and quality of life? (Community Assets/Strengths/Successes)

- 18a. As an urban planner, are there any challenges you are facing in this regard?
19. In your time at your occupation, have you seen any changes around the perception of healthy urban planning in the city of Lahore? If so, who/what do you think is affecting this change?
20. Do you have access to any tools that help to make decisions? What kind of tools would be useful in helping to make decisions?
21. Do you foresee any standards or guidelines regarding healthy urban planning in the future Master Plan of Lahore?
22. In your view, are there any policy barriers like (political pressure and lack of finances) that affect decision making opportunities at the provincial or municipal level?
23. What new initiatives, recommendations or suggestions do you have to improve health and quality of life of the people in Lahore?
24. How will you rate the inter and intra departmental coordinations? For instance, if you want to get health data from the public health department how easily accessible it is?
25. What are the gaps, needs and challenges and what skills and abilities are needed to address the urban population health issues in Lahore?
26. What municipal policies and supports the City of Lahore require further for the integration of health in the urban policies, strategies and plans?
27. What outcomes would you like to see from this survey?
28. We have covered a lot. Is there anything else you believe I should know to help us better understand what influences how decisions are made?

Close: Thank you very much for your time. Your knowledge and insights will be very helpful to us. The researcher expects to complete its research process over the next month. This contact information would not be linked with your responses [When the process is completed, researcher would be happy to share a summary of its results. Would you like to receive a copy?] **Yes/No**

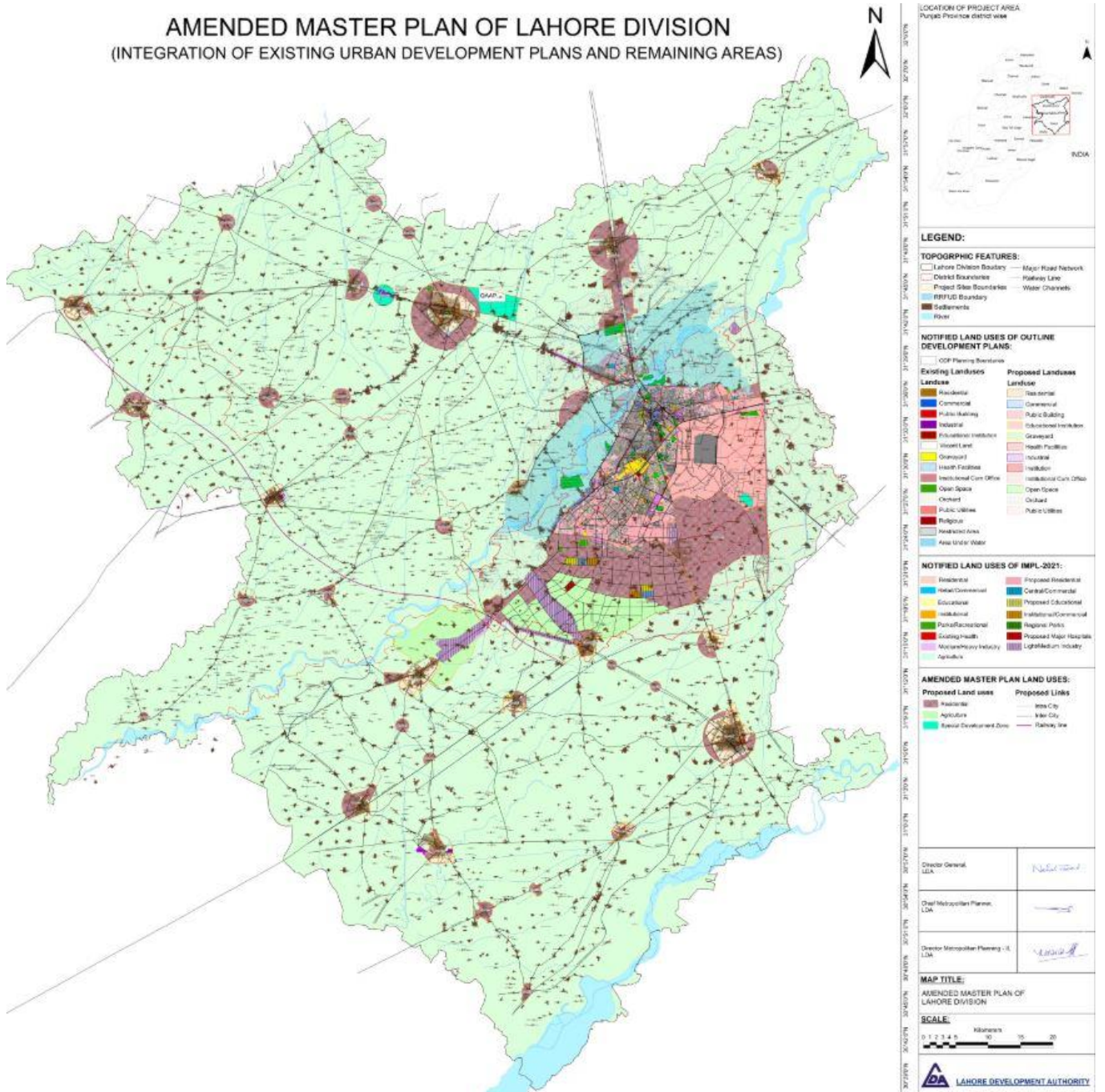
THANK YOU! THAT CONCLUDES THE SURVEY

Appendix F: Integrated Master Plan of Lahore- 2021 Map



Appendix G: Amended Master Plan of Lahore

AMENDED MASTER PLAN OF LAHORE DIVISION (INTEGRATION OF EXISTING URBAN DEVELOPMENT PLANS AND REMAINING AREAS)





The Punjab Gazette

PUBLISHED BY AUTHORITY

LAHORE MONDAY JULY 25, 2016

LAHORE DEVELOPMENT AUTHORITY

METROPOLITAN PLANNING WING

NO. LDA/CMP/ 6200

DATED: 20-7-16

NOTIFICATION

The Lahore Development Authority in its meeting held on 14.07.2016, has approved the Amended Master Plan of Lahore Division (Integration of existing Urban Development Plans and remaining areas) under the LDA Master Plan Rules-2014 with following amendments with immediate effect:-

- (i) The whole division is taken as the Project Area and all existing IMPL-2021, Out Line Development Plans, Agroville Development Plans and remaining areas are taken as a unified Master Plan for Lahore Division (Integration of Existing Urban Development Plans and remaining areas) for proposed amendments.
- (ii) Wherever possible the land uses of built up areas as proposed in the existing Master Plan, Outline Development Plans and Agroville Development Plans are kept intact.
- (iii) The land uses are proposed for housing, and Special Development Zones.
- (iv) The developers / sponsors shall have to seek necessary NOCs from the Irrigation Department regarding flood prone area and adhere to flood routes / area requirements as specified by the concerned

- agencies / departments.
- (v) For future integrated urban growth for housing land use in potential growth sites land has been allocated in shape of circles and semi circles, following the compact growth principle to provide definite areas for future spatial growth.
 - (vi) Transportation contributes to the development of economic, social, political and cultural fields and uplifting the economic conditions of the people and to ensure synergy in physical growth of the area. Therefore, in addition to existing infrastructure and transport system, bye passes and structure plan roads have been proposed within the Project Area to promote better connectivity and linkages.
 - (vii) The developers / sponsors who have purchased land for housing schemes in proposed agricultural area in site LHR-04 and have submitted valid ownership documents prior to cut of date published in the Public Notice dated 02-04-2016 would be considered for approval of housing schemes.
 - (viii) The Army Restricted / Semi Restricted Area shall apply as per the Army Policy.
 - (ix) The proposed land uses are indicated with symbolic colours as shown in the legend of the plan in the Amended Master Plan.

Nabeel Javed
(NABEEL JAVED)

**DIRECTOR GENERAL
LAHORE DEVELOPMENT AUTHORITY
LAHORE**

Appendix H: Health Aspects found in Master Plan of Lahore

Urban system policies	Major elements found in the plans
Transport	<p><u>IMPL-2021</u></p> <ul style="list-style-type: none"> • Transportation proposals are proposed in the context of JICA study conducted in 1991. • Issues of transportation in Lahore were identified as a mix of failure and success. The failures include poor road safety with lack of road maintenance, non-standardized junction designs, poor detailing, erratic attitudes of driver, lack of supervision and inappropriate traffic control. The success includes implementation of road construction and widening projects increased number of buses. • Plan allocated 43% of the total master plan budget for transportation projects in Lahore. • Identified the strategies for road improvements, increase in road capacities, areas in which new roads are to be constructed, improvement of public transit with marked bus terminals locations, markings for animal drawn vehicles, pedestrians and heavy traffic and construction of grade separated facilities to reduce the traffic congestion in the city. <p><u>LUTMP-2030</u></p> <ul style="list-style-type: none"> • Identifies bicycle, rickshaws and horse carriage are considered affordable as convenient mode of travel in the city. • Vulnerable road users which are more exposed to traffic fatalities, include 30 % pedestrian, 10 % cyclist and 8 % motorcyclists due to inadequate walkways and cycle routes. • Without proper provision of road crossing for residents, particularly in dense urban areas, results are high pedestrian fatalities. • Plan identified major issues to be poorly coordinated project implementation, limited funding, retail encroachments, lack of road classification, no laws for pedestrians, cyclists, animal drawn carts and hand pushed carts even though they make up around 70% of the road users, unmanaged public services result in the illegal parking, poor or no sidewalks. Secondary and tertiary road/ drainage networks in lower income parts of the city have been neglected and become impassable in the rainy season for pedestrians and vehicles. • There are many gaps and missing areas in the National Transport Research Centre (NTRC) Manual for Signs NTRC e.g. work zone area, school children signage. • Identifies importance for traffic management, road safety, comfort and urban environment. • Includes strategies to increase road capacity and effectively meet transport demand by providing

	<p>the city with a high-quality public transport system which must be developed in integration with the urban development. The core network to be composed of urban rail (RMTS) and Bus Rapid Transit (BRT). Secondary and feeder services by buses with different sizes and types of services.</p> <ul style="list-style-type: none"> • Strategies include a combination of minor road improvement, junction re- design, parking management, pedestrian/ bicycle path development and other cost-effective traffic management measures. • Plan identified that Non-motorized transport modes (NMT) <i>i.e.</i> walk and bicycle has predominant share in daily trips therefore NMT network planning must be integrated with detailed road section planning and intersection planning. <p>Plan encourages Rail based mass transit system to be the trunk public transport system of Lahore, integrated land use and urban development with transportation and environmental management, bus terminals serving as connecting facility for intercity passengers and establishment of new organizational setup to make decisions on various transport projects.</p>
Social and health services	<p><u>IMPL-2021</u></p> <ul style="list-style-type: none"> • Plan encourages ensuring clean and potable water for all. • New health care services were proposed to cater the demand of the city. <p><u>LUTMP-2030</u></p> <ul style="list-style-type: none"> • Plan indicates that 85% of people use potable (tap) water with 10% dependent on hand pumps. Sanitation service is provided to 80% of the city population. • It is estimated that 70% of waste is lifted in the city. • Plan indicates that seven priority diseases as diarrhoea, dysentery, respiratory infections, malaria, cough, dog bite and scabies. • There is an acute shortage of primary health care reason being increasing urban population.
Education	<p><u>IMPL-2021</u></p> <ul style="list-style-type: none"> • Plan identifies different school, colleges and universities in Lahore with main location and access points. The conditions of government schools are considered to be bad with either no building or toilets facilities. • For facilities like universities and colleges etc., there are limited options in the planning area till 2021 as larger chunk of south/ southwest land is not available. <p><u>LUTMP-2030</u></p> <ul style="list-style-type: none"> • The 1998 Census indicated that the literacy rate of urban dwellers in Lahore District was 69.1 %.

<p>Employment and economic development</p>	<p><u>IMPL-2021</u></p> <ul style="list-style-type: none"> • Data is derived from census report of 1998. It showed that most people are self-employed in the city. • Most of the commercial centers are unplanned with no systematic hierarchy causing socio-physical and transportation problems. • The current plan ensures that the potential of city is articulated to meet the demands of the citizens properly. The enrichment of its potential to improve the urban economy and reduce unemployment. <p><u>LUTMP-2030</u></p> <ul style="list-style-type: none"> • As per plan, the employment participation rate (Number of employed persons/ Total population) in Lahore is estimated to be around 27 %. This figure is rather low, and the main reason being that most of the population is young and is below the employment age group of 0 ~ 16 years. • Unemployment is almost 99 % among female resident. • The middle-income group accounts for just over 54 % of all households, with an average income of around PKR 20,000 (USD 250) per month. When converted to income per capita, it amounts to just over PKR 3,500 per month or USD 1.4 per day per person, rather low income on per capita basis by international standards. • Lahore labour force is characterized as mostly service workers by occupation type, social services, trades and commercial activities by industry type.
<p>Land use and urban design</p>	<p><u>IMPL-2021</u></p> <ul style="list-style-type: none"> • Land has become an investment commodity in the city. • Lahore is characterized by three zones: • inner or central zone comprising of walled city • intermediate zone comprising of planned housing localities, actives and related services • Outer zone consisting of present urban sprawl new housing schemes sponsored by public or private sector. • Shift of well-off section of society and expatriates from rural or inner parts of Lahore. This result in combination of planned and unplanned land use pattern. • In metropolis, activities developed along roads resulting in conversion of land use and creating congestion and encroachments. • Agricultural land is smaller in size and some negative trends in terms of land use can be

	<p>observed where green belts/agricultural lands are used for development purposes and open spaces in private housing schemes are misused for other purposes.</p> <ul style="list-style-type: none"> • The main eyesore of the city is its repulsive townscape with wall chalking, neon signs, electric cables, encroachments, depleted housing and advertisement. • Main objective of the plan is to reduce and anticipate the unplanned urban growth. • Plan suggested first, land pooling technique with the benefits including opportunity to structure urban fringe development which is required for infrastructure, land uses and subdivision layouts with no cost to government. • Second, dual land markets concept used by the developing countries in which markets are controlled by density, zoning and other regulations as compared to informal markets. • Plan identified the areas for renewal and proposed approach and methodology for implementing these projects to preserve the cultural heritage manifested in architecture and urban design of the city. • Plan identifies that urban development is fragmented and is under the control of a number of authorities/agencies with overlapping functions. • Key issues of city are infrastructure deficiencies, land management, housing, traffic and transportation, sustainability of living environment, urban governance and finances. • Plan encourages vertical growth, densification, planning strategy to provide link between schemes for better accessibility and ensure public transport corporate, shifting of incompatible land uses, upgrading of katchi abadis and protection of location of riverbeds. • Plan encourages environment protection measures to safeguard pollution such as air, water, land and noise. • Plan promotes effective legal and institutional framework. • Short term strategy includes infill and consolidation of vacant planned areas, improving traffic and transportation, flood management, education, health and recreational facilities. <p><u>LUTMP-2030</u></p> <ul style="list-style-type: none"> • The City Government should develop area-wide computer-based transport planning models in the framework of overall city land use planning. • The Local Government shall be facilitated to prepare, approve and regularly update land use plans for all towns and cities. Land use plans shall provide a programmatic and efficient base to enable towns and cities to develop an integrated transport and traffic engineering plan and restructure the urban space.
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	<ul style="list-style-type: none"> • The government to invest in research, development, educational programs and utilization of clearer technologies in the context of indigenous knowledge to reduce vehicular tailpipe emissions and improve air quality of cities. The Local Government shall also make ensure that environmental impact assessment shall an essential component of the transport and land-use structure planning.
Housing	<p><u>IMPL-2021</u></p> <ul style="list-style-type: none"> • Accelerating process of invasion and succession causing environmental degradation and shortage of housing. Provision of urban infrastructure became inefficient and costlier and is affecting the cost of housing affordability. • Population increase use shelter problem for urban poor who can't afford housing in formal sector. • The five-year development plan address housing problem for middle- and lower-income groups. It required public sector to implement housing schemes. • The plan proposed module of the land use of the housing services which are in low standard, nonetheless, cost effective and environmentally safe. • The plan proposed subsidized housing for poor through cross subsidies, incremental infrastructure, and smaller sized lots and tax and micro-credits provision. <p><u>LUTMP-2030</u></p> <ul style="list-style-type: none"> • Insufficient housing schemes for low to middle income class. According to Population Census 1998, about 68 % of total population of Lahore owned a house, 22 % rented a house and the rest are homeless. • The house ownership in low income group is very restrictive, joint family system prevails, consequently the household size increases over a period of time. • Due to urbanization Lahore is facing severe shortage of housing. Majority of housing units comprised of two to three rooms, with 3 inhabitants per room on average. It is an adverse phenomenon not experienced in developed countries where household size becomes small as a city grows with economic development. Such household congestion is attributed to high density in urban areas of Lahore.
Public open space and recreation	<p><u>IMPL-2021</u></p> <ul style="list-style-type: none"> • Facilities in the city includes cinemas, parks, playgrounds, museum, historical places, restaurants, malls and hotels.

	<ul style="list-style-type: none"> • The master plan encouraged revival of potential waterside recreation along the riverbanks. <p><u>LUTMP-2030</u></p> <ul style="list-style-type: none"> • Envision that Lahore will have large number of theatres and restaurants, with the walled city and historical monuments preserved. Its industrial estates, technology parks, and shopping centres to revive city's art and culture.
Public safety	<p><u>IMPL-2021</u></p> <ul style="list-style-type: none"> • Pick pocketing and other social crimes are the issues in the city. • In line with the framework development by the National Road Safety Secretariat, Ministry of Communication of the Government shall formulate comprehensive road safety legislation. <p><u>LUTMP-2030</u></p> <ul style="list-style-type: none"> • Plan encourages government to develop mandatory safety audit as part of each transport infrastructure project to ensure road safety of the road users and frame regulations and rules under proposed road safety legislation such as: Rules for operation of vehicles on road, Legislation for compensation, speed limits, Responsibilities of pedestrians on roads, Procedures to follow in the event of accidents. • Encourages government to allocate budget for community education to change driving and road user behaviors.

Appendix I: Common themes emerged from Key Informant interviews

Issues:
Most important health issues: <ol style="list-style-type: none"> 1. Respiratory issue 2. Diabetes 3. Obesity 4. Water borne diseases 5. Mental health 6. Unhygienic food 7. Heat wave
Urban sprawl
Urbanization <ol style="list-style-type: none"> 1. Migration
Political influence in decision making
Lack of funding
Increased air pollution (smog)
Lack of Understanding of WHO healthy city concept
Lack of education related to healthy city concepts
Lack of housing affordability
Lack of proper infrastructure
Outdated data and old methods of data collection
Lack of consideration of health in the plans
Lack of public awareness
Low income are the underserved population
Lack of food security
Healthy living confined to posh areas only
More demand of facilities and less resources
Unqualified team of professionals
Amended Master Plan has a land use plan but no policy document
Revisions in the plans are not done

Plans are rigid and restrictive
Issue of waste management
There is no strategic planning for future issues
Due to lack of awareness and education, people do not attend the consultation sessions even though they are invited.
Less affordability in people
No proper facilities for exercise (also due to smog it is not possible to exercise outside)
Too much focus on the road's construction
No building regulations for the residential, commercial buildings for instance about air circulation or insulation etc.
Restoration of some old buildings is done in walled city, but no consideration is given to the infrastructure upgrade and to make living conditions better
Increase in diseases due to poor living conditions
Relationship of health and urban planning and not taught to urban planners
Slums and squatter settlements
Traffic congestion issues
Weak implementation mechanism for master plan policies
People have limited vision, if invited for public consultation they only worry about their land
Old Master Plan implementation:
Master plan policies are a failure in case of Lahore due to: <ul style="list-style-type: none"> 8. Lack of inter and intra departmental ordination 9. No public consultation 10. Treated as a Zoning document 11. Agriculture land is converted into private housing schemes 12. Vague policies
Successful Projects in city:
<ul style="list-style-type: none"> 1. Beatification projects in Liberty Market 2. Tree plantation in some parts of the city 3. Plantation campaign done by private institution 4. Cleanliness campaign done by private sector
Involvement of media in the awareness
Community spirit is what make Lahore healthy

Health is implicitly mentioned in Master Plan for instance, separation of residential areas from industrial areas, restricting development along the flood prone area of river Ravi
Master Plan to be changed to strategic development plan
Government is planning on decentralization which will hopefully reduce migration
Development Authority has made compulsory for new private housing schemes to plant trees
Completion certificate only issued to people who plant 2-3 trees in front of their houses
Forced the retailers in Gulberg area to repair the sidewalks on self help basis
Removal of encroachment and debris
Installation of lights and fire safety hydrants in central park of Lahore
Definition of healthy city by professionals:
Healthy city means healthy urban design
Healthy city is the active city where people can walk safely
Healthy city should include diversification
Tourism if promoted can create healthy places in city
Creation of parks where people feel safe
Urban planning is a mixture of health beauty and convenience.
Hopes for future master plan:
Positive: due to academia consultation
Use of tools such as Geographic Information System (GIS) to help guide decision making
For the small projects of urban renewal and tree plantation, the new master plan will give policy measures in the future
Suggestions:
People should be connected to their surroundings
Healthy city model for the city should be created
Active transportation should be promoted

Glossary

Master Plan: A master plan is a dynamic long-term planning document that provides a conceptual layout to guide future growth and development. Master planning is about making the connection between buildings, social settings, and their surrounding environments. A master plan includes analysis, recommendations, and proposals for a site's population, economy, housing, transportation, community facilities, and land use. It is based on public input, surveys, planning initiatives, existing development, physical characteristics, and social and economic conditions. (The World Bank, 2015)

WHO Healthy Cities: A healthy city is 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 developing to their maximum potential. (Health Promotion Glossary, 1998)

Grade-separated Facilities: Grade separation is a method of aligning a junction of two or more surface transport axes at different heights (grades) so that they will not disrupt the traffic flow on other transit routes when they cross each other. (Wikipedia, 2020)

Katchi abadis/slums/squatter settlements: In Pakistan, especially in cities where thousands of people live, *katchi abadis* means "raw settlements." The living conditions in these settlements do not support life and those who live in slum areas are vulnerable to unhygienic environments and extreme weather conditions. They are deprived people who do not have enough resources to maintain the health of their children. (PCEMF, 2011)

Land readjustment/Land-pooling technique: The aim of such schemes is to develop land and rationalize its delivery at little or no cost to the public sector at the urban fringes. The process begins by declaring an area of privately-owned land to be the subject of such a scheme. The layout plan is prepared, and calculations are made for the percentage of land roads, infrastructure and community uses. The cost of infrastructure and such services is deducted. The remainder of land is returned to owners, who now hold a developed smaller land parcel but with increased land value because of infrastructure and services. The city meanwhile sells its share of the improved land to recover the cost of services installed. Alternatively, the city's share can be sold to provide low-income housing. (IMPL-2021)

Satellite towns: “Satellite cities or satellite towns are smaller municipalities that are adjacent to a major city which is the core of a metropolitan area.” (David, 2007)