Asraful Alam
Rukhsana *Editors*

Public Health and Diseases

A Geographical Study of Women's Health, Urban Mortality and Health Policies

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Part I
Public Health and Diseases

Chapter 1
A Geographical Study of Public Health and Disease: An Overview

Sumaiya Khatun, Asraful Alam, Rukhsana, and Dhanjit Deka

Abstract The chapter focuses on public health and disease prevalence in developed, developing, and underdeveloped countries, with a focus on India's distinctive challenges. The analysis covers a wide range of aspects, such as the infrastructure for healthcare, the prevalence of diseases, and the efficacy of the policies implemented. Efficient disease prevention and management is facilitated in developed countries by sophisticated medical technologies, strong healthcare systems, and well-implemented public health policies. On the other hand, inadequate healthcare infrastructure, a lack of resources, and unequal access to healthcare are challenges faced by developing and undeveloped countries. Even though the healthcare infrastructure and disease control have improved significantly, India represents a complex public health picture with diseases and disparities in healthcare accessibility. The study highlights the necessity for the development of a multifaceted approach that takes socioeconomic variables, cultural differences, and regional variations in policy development and implementation.

Keywords Public health · Developed countries · Developing and underdeveloped countries · India's public health and diseases · Health policies

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1.1 Introduction

The study and practice of public health focuses on disease prevention and control, health promotion and maintenance, quality of life enhancement, and healthy living. In addition, it is a science and an art that uses population-based interventions to accomplish its goals through concerted societal efforts (Li & Jiang, 2019). An effective public health system is the only way to combat the enormous burden of illness, disability, and mortality (Chauhan, 2011). The goal of public health is often to improve community well-being by social rather than individual acts. It attempts to provide societal frameworks that enable individuals to live healthier lives (Kass, 2001). Public health seeks to make clear the role of government leadership, emphasizes "public utilities," and highlights the characteristics of public goods and services; highlighting "maintaining health equity" attempts to show that public health prioritizes equity in addition to ensuring health (Xue & Li, 2022).

The WHO Health For All campaign and the Alma-Ata Declaration of 1978 contributed to the increasing popularity of intersect oral action on social determinants of health (SDH) and health equity (Kostičová, 2015). Social determinants of health (SDH) encompass not only the environments in which individuals are born, grow, work, live, and age but also a broader range of systems and forces that shape everyday living situations. These systems and forces include political institutions, development agendas, and socioeconomic norms and policies (WHO, 2017). Socioeconomic factors have a significant impact on health and well-being and are mostly responsible for health inequalities. Studies have indicated that uncertainties related to housing, food, medicine, and the economy are linked to lower quality of life, poorer mental health, and adverse outcomes for people with chronic illnesses (Sonenklar et al., 2022). The World Health Organization (WHO) states that although poverty is sometimes described in absolute terms, its effects occur on a relative basis (von dem Knesebeck et al., 2018). People living in poverty are not only unable to make use of healthcare systems, but they are also unable to participate in decisions that have an impact on their health (Macfarlane et al., 2000). People who live in relative poverty are consistently known to have high rates of illness and early mortality, demonstrating the importance of poverty as a social determinant of health (Kawachi et al., 2002; Marmot et al., 2008; Wilkinson, 1997).

There are unfair and inevitable differences in health status within and between countries. In all countries with varying economic status, there is a social gradient in terms of health and illness: the lower the socioeconomic position of a country, the worse off it is in terms of health (WHO, 2019). Health conditions vary throughout countries based on their respective levels of development. Compared to people in less developed countries, people in developed countries have healthier lives (Guzel et al., 2021). The social, political, and economic conditions in developing countries are very different from those in Western countries where public health is integrated into the national identity and way of life (Jacob, 2007). In developing and underdeveloped countries, creating efficient health policy is challenging due to the absence of reliable health-related data (Koumamba et al., 2021). The paper attempts to

highlight the status of public health in various economic countries, as well as public health and diseases in India and the implementation of health-related policies.

1.2 Public Health Status in Developed Countries

There is growing evidence in developed countries that the changing social and economic conditions have led to a widening of health status inequalities and that inequities between rich and poor countries are also increasing (Baum & Fisher, 2014). Public health, particularly as a force for social change, had been overlooked as a lesser priority during much of the twentieth century in Western countries, which instead concentrated on providing national health insurance or national healthcare. Over the years, public health has gained the skills and technological advances necessary to tackle a wide range of emerging issues, including the growth of infectious diseases like HIV and the spread of chronic illnesses along with their risk factors and comorbidities like stroke, coronary heart diseases, new vaccines, antiretroviral therapy (Tulchinsky & Varavikova, 2010). Countries with high incomes like the United States, Sweden, and the United Kingdom depend substantially on the welfare state to influence the socioeconomic determinants of health (Eikemo & Bambra, 2008). The most comprehensive and wide-ranging welfare states are found in Europe, where countries have access to a range of policy implements including healthcare services, social policies (such as cash transfers, housing, and education), and healthcare services, which improve citizen health and minimize the negative health effects of socioeconomic inequality (Bambra, 2007). "…countries with welfare provision, such as Sweden or Norway, have better population health than those with less generous social safety nets" (Thomson et al., 2018). Over time, the average life expectancy of European citizens has increased, reaching 72.9 years for males and 80.1 years for females. Switzerland (82.8), Italy (82.5), and Spain (82.3) reported the longest life expectancies in 2010. In every European country, women have a longer life expectancy. The countries with the old age populations are Germany, Italy, Greece, and Portugal, where the proportion of citizens 65 and older is 20.6%, 20.2%, 19.1%, and 18.4%, respectively. This trend is driven by both falling birth rates and rising life expectancy (Seniori Costantini et al., 2015). However, there are still significant disparities in socioeconomic status in health throughout Europe and beyond; for instance, those with greater incomes, occupations, or levels of education had lower mortality and morbidity (Bambra, 2007; Huijts et al., 2017; McNamara et al., 2017). The wide range of health experiences that developed countries have endured over the past few decades offers an incredibly rich source of information for investigating relationships between economic and political institutions and policies and health trends (Powles, 2015).

1.3 Public Health Status in Developing and Underdeveloped Countries

Increasing public health spending in developing countries is essential to achieving universal health coverage (UHC) and combating serious illnesses like malaria, HIV/AIDS, and tuberculosis (Barlow, 2020). Differential effects on mortality over time have been observed among different income groups from high levels of blood pressure, glucose, cholesterol, and body mass index (BMI). Over the past 20 years, high-income countries have been able to reduce the contribution of these risk factors to mortality, while lower- and middle-income countries have shown an increasing trend in mortality due to high levels of BMI and glucose (Barquera et al., 2015). Over thirty new organisms have been discovered globally in the past three decades, including HIV, Vibrio cholera O139, SARS, coronavirus, highly dangerous avian influenza virus A, and novel H1N1 influenza virus; Asia's developing countries are where many of these organisms first emerged (Chauhan, 2011). Infectious diseases, including HIV/AIDS, tuberculosis, and malaria, account for a significant portion of mortality; these, along with noncommunicable diseases, constitute the double disease burden in many developing counties (Macfarlane et al., 2000). Chronic kidney disease affects more than 10% of the world's population. It is most prevalent in low- and middle-income countries (LMICs), which are least prepared to handle its effects (Kovesdy, 2022). Disability-adjusted life years (DALYs) per capita are 40% greater in LMCs; this difference can be attributed to the burden arising from cardiovascular illnesses in addition to sensory, respiratory, and infectious disorders (Prince et al., 2015). Poor hygiene results from improper WASH (water, sanitation, and hygiene); the burden of malnutrition (DBM) is doubled for LMICs; and a low life expectancy is a result of several noncommunicable diseases (NCDs), which are common in these countries and are caused by inadequate diet and poor living conditions, infections, insufficient taxes and regulations on alcohol and tobacco, and inaccessible healthcare facilities (Ezzati et al., 2018; Prüss-Ustün et al., 2019; Seferidi et al., 2022). The three primary types of childhood malnutrition—stunting, wasting, and kwashiorkor—occur mostly in children under five who live in LMICs. Severe wasting and kwashiorkor are generally referred to as severe acute malnutrition; this is caused by several factors, including persistent poverty, poor sanitation, unhygienic living conditions, a high rate of infectious diseases, adverse environmental conditions, food insecurity, low maternal and fetal nutritional status, and inadequate intake of nutrients during infancy and early childhood (Bhutta et al., 2017). Approximately one million children under the age of five worldwide die from severe acute malnutrition (SAM) every year. While chronic protein-energy malnutrition and stunting rates are rising in Africa, Asia bears a large portion of this burden; Asia is home to about 70.0% of the world's malnourished children. Over 12 million children in 6 Asian countries together suffer from SAM: 0.6 million in Afghanistan, 0.6 million in Bangladesh, 8.0 million in India, 1.2 million in Indonesia, 1.4 million in Pakistan, and 0.6 million in Yemen (Ahmed et al., 2012, 2014; Khor, 2003). The regions with the greatest risk for undernutrition are sub-Saharan Africa,

South Asia, and the Middle East and North Africa (MENA) region (Amir-Ud-Din et al., 2022). Women in South Africa who are of reproductive age (WRA) continue to have ongoing concerns about anemia (Silubonde et al., 2023). Over 800 maternal deaths occur every day, with LMCs accounting for the majority of these deaths. In 2015, almost one-fifth of all maternal deaths worldwide took place in India (Hamal et al., 2020; Lawrence et al., 2022). Rotavirus-associated diarrhea caused the mortality of almost 215,000 children globally in 2013, with LMCs accounting for the majority of these deaths (Girish Kumar et al., 2020). About two-thirds of all HIV cases worldwide and approximately three-fourths of all AIDS-related deaths occurred in the 15 member countries of the Southern African Development Community (SADC) in 2007 (Biyase & Malesa, 2019). South Asia and North Africa/Middle East have higher rates of ischemic heart disease (IHD) among younger individuals, and these regions accounted for the majority of the burden of IHD in 2010 (Moran et al., 2014). Healthcare spending in West African countries is rising. Improving healthcare, infrastructure and equipment, and human resources with trained healthcare providers is crucial (Sango-Coke & Bein, 2018).

The amount spent on public health varies greatly throughout societies and is often insufficient in low- and middle-income countries (LMICs). For instance, in 2016 public health spending was, on average, $60 per capita in lower-middle-income countries and $10 per capita in low-income countries, whereas it was over $2250 per capita in high-income countries (WHO, 2018). Research studies showed that weak economic growth may be the root cause of some LMICs' low tax revenues and insufficient government investment in services and healthcare (Dieleman et al., 2017). Therefore, economic development is a potential way to raise health spending in LMICs (WHO, 2018). Health information systems (HIS) provide data that is crucial for both assessing and enhancing the provision of healthcare services and programs. However, the majority of developing countries struggle with significant issues related to the gathering, compiling, analyzing, and reporting of health data, which leads to incomplete, erroneous, and delayed data that is not helpful for making health-related decisions (Karuri et al., 2014). In developing and underdeveloped countries, creating efficient health policy is challenging due to the absence of reliable health-related data (Koumamba et al., 2021).

1.4 India's Public Health and Disease as a Developing Country

India's public health has significantly improved since the 1950s. Affordable medicines and equipment are now available which are highly effective; examples are antitubercular medicines, antimalarials, etc. However, urbanization and industrialization have also had negative effects on health. Due to a variety of social, political, and economic factors, there is ongoing inequality in health status. Poor sanitation increases communicable and noncommunicable diseases. Noncommunicable

diseases account for 42% of all deaths in this country, making them the primary cause of mortality. An additional 38% of deaths are related to nutritional, perinatal, maternal, and communicable diseases, and 10% of deaths are related to injuries and ill-defined causes. It is estimated that approximately 2.5 million people in India are infected with HIV; over 1.5 million people suffer from malaria every year; over 300 million children under 5 experience acute diarrhea diseases; and, although data is limited, over 35 million people are likely carriers of the viral hepatitis B virus. Approximately 1.9 million cases of tuberculosis (TB) occur in India each year, accounting for one-fifth of all TB cases worldwide (Chauhan, 2011). The Global Burden of Disease study's reports indicate that India has an age-standardized cardiovascular disease (CVD) death rate of 272 per 100,000 people, which is significantly higher than the 235 average for the world. In 2016, CVDs accounted for 28.1% of deaths in India; the highest rates of CVD are observed in the states of Tamil Nadu, Kerala, and Punjab. The prevalence of CAD is 11% for those without diabetes and 21.4% for those with diabetes. In 2017, India had the largest number of diabetes cases worldwide—more than 73 million cases. With an average prevalence of 8.8% among those between the ages of 20 and 70, diabetes has become an increasing issue in India; the prevalence of CAD is almost half that of urban populations (Kumar & Sinha, 2020). In 2019, air pollution was responsible for almost 1.67 million deaths in India. The majority of these deaths were caused by home air pollution (0.61 million) and ambient particulate matter pollution (0.98 million) (Pandey et al., 2021).

There are significant differences in the utilization of maternal health services and maternal deaths within and across states in India, making maternal health a significant public health concern; in 2015, almost one-fifth of all maternal deaths worldwide took place in India. In comparison to states in the south like Tamil Nadu (90) and Kerala (66), states in the north like Assam, Uttar Pradesh (including Uttarakhand), and Rajasthan have comparatively high maternal mortality ratios (MMRs) (328, 292, and 255, respectively) per 100,000 live births. The primary structural determinants influencing the utilization of maternal health services and maternal mortality are economic status, caste/ethnicity, education, gender, religion, and culture. Other factors include residential location, maternal age at childbirth, women's exposure to mass media, and maternal health messages. These factors are also affected by structural factors (Hamal et al., 2020). Malnutrition accounted for 68.2% of all deaths of children under the age of five in India in 2017 and 17.3% of all disability-adjusted life years (DALYs) of health loss across all age groups. It was the leading risk factor for death in children under the age of five in every state (Swaminathan et al., 2019). According to the revised figures in 2011–2013, an estimated 78,000 children die from rotavirus gastroenteritis each year in India, with over 59,000 of the deaths occurring in infants under the age of 2 (Girish Kumar et al., 2020). In 2015, pneumonia and diarrhea together accounted for over 190,000 deaths in India among children aged 1–59 months. Based on an estimate, India's 5–14-year-old children suffered about 30,000 deaths from the combined burden of pneumonia and diarrhea in 2016 (Farrar et al., 2019). The burden of illness among India's tribal population is quadrupled—by communicable and noncommunicable

illnesses, malnutrition, mental illness, and addictions aggravated by poor health-seeking behavior (Kumar et al., 2020). The old age of the population has a major impact on the country's social, economic, and health development. In India, unregulated systems, a lack of funds, and an inefficient public health system present different challenges to older people's access to healthcare in terms of availability, quality, accessibility, and cost. In order to effectively address the health disparities among India's old age population, family involvement in care giving is crucial at the micro level (Sahoo et al., 2021).

People in India are increasingly seeking private health treatment, even for mild ailments like fever, diarrhea, and colds, regardless of their financial situation. Nevertheless, the private healthcare sector has significant challenges due to a shortage of skilled personnel and is more expensive than the public sector (Das et al., 2008). In rural and urban India, there is a marked disparity in access to healthcare. In contrast to urban citizens, rural residents have significantly fewer options when it comes to public or private services (Barik & Thorat, 2015). Public investments in the health sector need to be increased, and modern health infrastructure should be constructed in rural areas, in order to improve the quality and accessibility of public healthcare (Banerjee, 2021).

1.5 Public Health Policy in India

Health policy can be defined as the "decisions, plans, and actions that are undertaken to achieve specific healthcare goals within a society" (Kokko & Kork, 2021). The Alma-Ata conference, held in 1978 and jointly organized by UNICEF and WHO, stated the goal of achieving health for all by the end of the century; this conference emphasized the importance of primary healthcare in achieving a globally acceptable level of health (Baum, 2007).

The Central Government of India offers a more comprehensive framework and direction for all programs, including those addressing leprosy, HIV/AIDS, malaria, smallpox, and tuberculosis. The Union Ministry of Health and Family Welfare is in charge of carrying out a number of initiatives pertaining to family welfare and health, as well as the national promotion of traditional and indigenous medical systems and the prevention and control of the majority of infectious diseases. The Ministry is also in charge of carrying out World Bank-supported initiatives to combat AIDS, malaria, TB, and other diseases (Grover & Singh, 2020). The health sector's strategy under the Five-Year Plans has been effectively governed by the National Health Policies of 1983 and 2002; 14 years have passed since the last health policy, and a lot has changed during this time. The advancements made since the last NHP in 2002 are expanded upon in NHP 2017. The developments have been entitled in the document "Backdrop to National Health Policy 2017-Situation Analyses," Ministry of Health & Family Welfare, Government of India. The Sustainable Development Goals (SDGs) are acknowledged as having paramount importance in the policy. The policy's objective is to achieve the highest level of

health and well-being for all people of all ages "through a preventive health care orientation in all developmental policies, and universal access to good quality health care services without anyone having to face financial hardship as a consequence." This would be accomplished by bringing down the cost of healthcare, increasing access, and enhancing quality (National Health Policy, 2017). The National Policy for Older Persons was established by the Central Government of India in 1999 to improve the health and welfare of senior citizens in India in response to the country's growing geriatric population. This policy's main strategy is to motivate families to look after their older family members. This strategy has not been implemented effectively, especially in rural regions; more initiatives are needed to meet the social, psychological, and physical needs of the poor (Paul & Asirvatham, 2016). The "National Program for prophylaxis against blindness in Children due to vitamin A deficiency" was introduced by the Indian government in 1970 with a target age group of 1–5 years. After that, in 1991, Indian specialists revisited the Vitamin A Supplementation (VAS) program in light of growing data showing its effect on child mortality (Arlappa, 2023). The Government of India (GOI) launched the NRHM in 2005 with the goal of achieving the objectives of the MDGs and the National Health Policy, as well as providing efficient healthcare to the nation's rural population. The NRHM has made significant improvements in maternal, neonatal, and child health (MNCH) in India. Since the urban health component was added, the NRHM has changed to become the National Health Mission (NHM); NHM includes disease control programs, vaccination campaigns, and noncommunicable disease control in addition to reproductive, maternal, newborn, child, and adolescent health (Nagarajan et al., 2015).

Research has shown that equality and fairness in health are crucial for societal well-being. With the growing number of chronic noncommunicable diseases, the benefits of physical activity (PA) on health have become more significant (Hämäläinen et al., 2016). To enhance population health and health equity, the Health in All Policies (HiAP) approach to public policy across sectors systematically takes into account the health implications of decisions, identifies synergies, and avoids harmful health impacts. In the context of urban policy, HiAP is essential for local decision-making processes to support public health initiatives designed to meet SDG targets (Ramirez-Rubio et al., 2019). Professionals in public health who are aware of the political aspects of health policy are better able to anticipate possibilities and challenges for government action, accomplish more realistic research and evaluations, and create more successful policies and programs (Oliver, 2006). To achieve universal health coverage and sustainable development goals, there is an urgent need to concentrate on creating a sustainable public-private partnership that will deliver quality services without compromising the values and principles of the country's public health system. Achieving universal health coverage (UHC) has become a major policy concern. To achieve this, considerable increases in health spending as well as goals for expanding access to a variety of high-quality health services are required.

The difficulties associated with implementing policies must be taken into consideration in any endeavor to enhance the functioning of the health system. The key to

managing the implementation process is comprehending and handling stakeholder cooperation. Decision-makers can benefit from systematic and continuous political analysis, which increases the probability that health policy will be implemented successfully (Campos & Reich, 2019).

1.6 Conclusion

The public health and disease management situations in developed, developing, and underdeveloped countries differ greatly from one another. Developed countries typically have strong public health policies, modern medicine, and robust healthcare infrastructures, all of which improve disease management, prevention, and population health in general. On the other hand, developing and underdeveloped countries frequently struggle with issues including scarce resources, inadequate medical facilities, and unequal access to healthcare. India as a diversified country faces challenging public health issues. Even though the healthcare infrastructure and disease control have improved significantly, issues including infectious diseases, noncommunicable diseases, and unequal access to healthcare still exist; to address these difficulties, a multifaceted approach is required to establish effective public health strategies. Policies must be implemented with a focus on structural deficiencies, strengthening healthcare systems, and prioritizing preventive measures. Furthermore, encouraging health-seeking behaviors and lowering the burden of disease is greatly helped by raising public awareness and providing information. To develop sustainable solutions, cooperation between governmental agencies, healthcare providers, and international organizations is crucial. Countries can strive toward establishing resilient healthcare systems that support the well-being of their people by encouraging an all-encompassing and inclusive approach.

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Chapter 2
Global Trend of Urban Mortality: A Comprehensive Bibliometric Analysis

Arup Baidya, Sourav Biswas, and Asraful Alam

Abstract This research article uses the Scopus database to present a comprehensive bibliometric analysis of the global trend in urban mortality spanning three decades (1993–2022). Our systematic quantitative approach reveals exponential publication growth, signifying heightened global interest in urban mortality. Collaborative networks across authors, institutions, and countries underscore international cooperation in this critical field. Key findings highlight prolific journals, highly cited documents, and influential contributors, with the New England Journal of Medicine, Environmental Health Perspectives, and American Journal of Epidemiology emerging as the top three productive journals. The United States, China, and Brazil lead in publications and citations for mortality and epidemiology. Enduring themes like "mortality," "epidemiology," and "air pollution" persist, while emerging themes like "climate change" and "Covid-19" reflect adaptability to contemporary challenges. Analysis of author keywords and research themes provides nuanced insights, evolving from an initial emphasis on causes to encompass risk factors, spatial distribution, and impacts of climate change and urbanization. This study enhances academic understanding and holds practical implications for public health interventions, providing a foundation for informed decision-making amidst ongoing global urbanization.

Keywords Urban · Mortality · Epidemiology · Public health · Bibliometric analysis · Disease

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2.1 Introduction

Urbanization, a hallmark of the twenty-first century, has reshaped the global landscape, influencing various aspects of human life and extending significantly to public health. More than 55% of the world's population resides in urban areas, a proportion projected to surge to 68% by 2050 (Vilar-Compte et al., 2021). This demographic shift presents a distinctive opportunity for guiding urban development in a manner that safeguards and enhances the health and well-being of its inhabitants. However, the realities of urban living paint a complex picture, as a substantial portion of the 4.2 billion urban dwellers face challenges such as inadequate housing, substandard transport, poor sanitation, and ambient air quality that often falls short of WHO guidelines (Aboulnaga et al., 2021). In addition to these challenges, various forms of pollution, including noise, water, and soil contamination, further compound the health risks in urban settings, making cities not only epicenters of noncommunicable diseases but also significant contributors to climate change (Yadav et al., 2021).

One pivotal factor contributing to the health challenges in urban areas is the mortality transition, a deviation from historical norms observed in developing cities. The aftermath of World War II marked a turning point, catalyzing substantial improvements in health conditions in poorer nations. This transformation was fueled by breakthroughs such as the mass production of antibiotics like penicillin and streptomycin; the development of vaccines targeting diseases like yellow fever, poliomyelitis, and measles; the establishment of the World Health Organization in 1948; and the widespread disease eradication campaigns (Jedwab & Vollrath, 2019). Acemoglu and Johnson (2007) highlight that until 1940, limited improvements in health conditions were observed in the Americas, Africa, and Asia. The factors mentioned above, however, triggered a dramatic enhancement in life expectancy, particularly in the less-developed parts of the world, commencing in the 1940s (Acemoglu & Johnson, 2007).

Presently, 152 developing countries house almost 86% of the global population, each grappling with distinct health challenges (Lucero-Prisno III et al., 2023). WHO's Global Health Estimates (GHE) are a critical repository of the latest data on causes of death and disability worldwide. Derived from a myriad of sources, including national vital registration data, WHO technical programs, United Nations partners, and scientific studies, the GHE undergo thorough review by WHO Member States before dissemination (Guthold et al., 2021).

A diverse spectrum emerges when examining the top ten global causes of death in 2019. Ischemic heart disease, stroke, chronic obstructive pulmonary disease, lower respiratory infections, neonatal conditions, trachea-bronchus-lung cancers, Alzheimer's disease and other dementias, diarrheal diseases, diabetes mellitus, and kidney diseases collectively account for the majority of global mortality. Notably, this spectrum underscores the intricate interplay of infectious and noncommunicable diseases, reflecting the multifaceted health landscape of urban environments (WHO, 2019).

Disaggregating mortality by development status reveals contrasting scenarios. In developed countries, advancements in healthcare infrastructure and technology have substantially declined mortality rates. Conversely, underdeveloped and developing countries face a myriad of challenges. Inadequate healthcare systems, limited access to essential medicines, and a higher burden of infectious diseases contribute to elevated mortality rates. The urban-rural divide further exacerbates these disparities, with urban areas often bearing a higher burden of noncommunicable diseases linked to lifestyle factors (Ding et al., 2019; James et al., 2020; Wu et al., 2020).

The gender dimension of mortality unveils a nuanced pattern. Although annual global deaths and disability-adjusted life years (DALYs) among women are around 15% lower than those for men, women collectively spend about 20% more years living with a disability. Over the past two decades, there has been a notable surge in female deaths from Alzheimer's disease and other dementias, with nearly a threefold increase. These neurological disorders, affecting more women than men, underscore the need for gender-specific health interventions (WHO, 2019).

In light of these complexities, this research aims to conduct a comprehensive bibliometric analysis of the global trend of urban mortality. Through an exhaustive review of existing literature, we seek to unravel the past, present, and future trends in urban mortality. Specifically, the objectives include identifying key factors contributing to high mortality in urban areas, delineating the most prominent causes of mortality, comparing mortality trends in developed versus underdeveloped and developing countries, and forecasting future trajectories based on the existing body of literature. By employing bibliometric analysis, we aim to provide a synthesized and nuanced understanding of urban mortality dynamics, offering valuable insights for evidence-based policymaking and public health interventions tailored to the unique challenges of urban living.

2.2 Methodology

The primary objective of this investigation is to explore the existing literature pertaining to urban mortality. To achieve this, a systematic quantitative approach was employed (Kim, 2020; Menon et al., 2022; Rosalina et al., 2021). The study involved an extensive search for academic materials within the Scopus database, chosen for its comprehensive paper collection and robust citation data (Baas et al., 2020; Ejaz et al., 2022; Hasana et al., 2022). The selection of relevant publications followed the guidelines outlined in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework. Figure 2.1 delineates the criteria utilized to include or exclude papers in the course of this research.

During the initial identification phase, the Scopus database was systematically queried using a set of keywords combining "urban*" OR "city*" OR "metropolitan*" OR "town*" AND "mortality*" OR "epidemiology*" OR "death*," focusing specifically on the "title" field of documents. The search was constrained to the timeframe spanning from 1993 to 2022. Inclusion criteria encompassed original

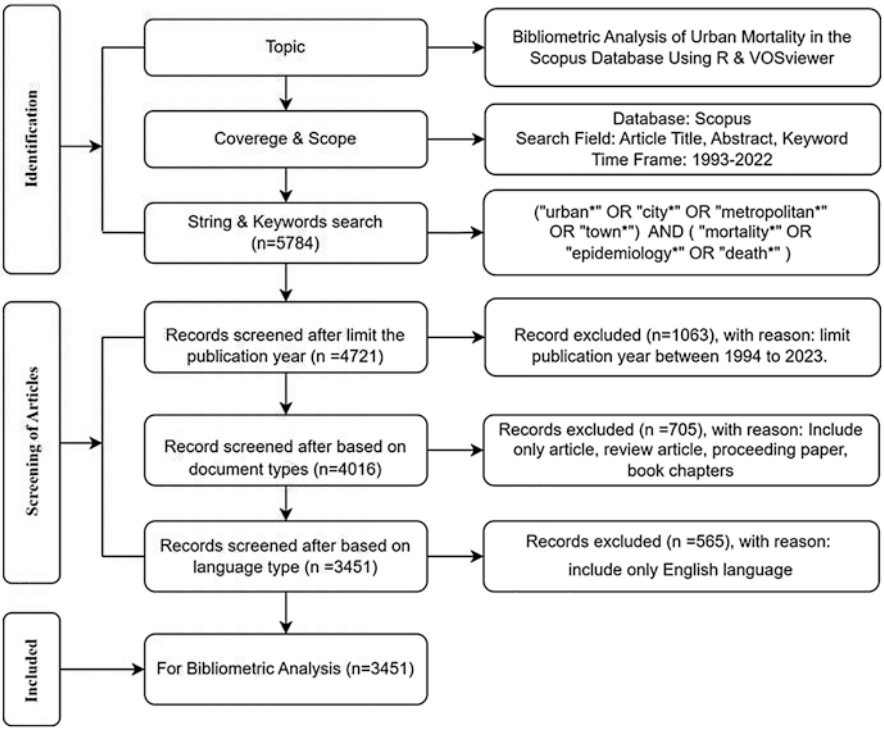

Fig. 2.1 PRISMA framework shows literature search criteria

research articles, review papers, book chapters, and conference papers written in English. Following refinement, a total of 3451 documents were obtained (downloaded on November 18, 2023), subsequently employed for bibliometric analysis. The query employed for document retrieval in this study was:

```
( TITLE ( "urban*" OR "city*" OR "metropolitan*" OR "town*" ) AND
TITLE ( "mortality*" OR "epidemiology*" OR "death*" ) ) AND
PUBYEAR > 1992 AND PUBYEAR < 2023 AND ( LIMIT-TO ( DOCTYPE , "ar"
) OR LIMIT-TO ( DOCTYPE , "re" ) OR LIMIT-TO ( DOCTYPE , "ch" )
OR LIMIT-TO ( DOCTYPE , "cp" ) ) AND ( LIMIT-TO ( LANGUAGE ,
"English" ) )
```

The comprehensive bibliographic data from the Scopus database was extracted in .csv format for subsequent analysis. Our approach for analyzing and visualizing bibliographic data involved the application of bibliometric techniques, utilizing Biblioshiny within the Bibliometrix R package and the VOSviewer software. To conduct data mining in bibliometrics, Biblioshiny, a statistical software program,