***Review Article***

**Benefits of Urban Green Spaces for Human Health: A Review**

**ABSTRACT:**

Urban green spaces (UGS) play a crucial role in promoting human health and well-being. This review explores the various physical, mental, and social health benefits associated with UGS, as well as the underlying mechanisms and design implications for urban-planning. UGS provide numerous physical health advantages, such as improved air quality, which reduces respiratory illness and healthcare costs. They also encourage physical activity, helping combat obesity and enhance overall fitness. Mentally, UGS alleviate stress, improve cognitive function, and boost mood, contributing to better psychological well-being of the user. Socially, UGS fosters community engagement, social cohesion, and a sense of place and identity, reducing feelings of isolation. The health benefits of UGS can be attributed to biophilia, stress reduction, and attention restoration. Effective urban planning should ensure the equitable distribution and accessibility of UGS across socioeconomic groups by utilizing GIS, space syntax, and other quantitative methods. Integrating nature-based solutions and creating a network of diverse green spaces can optimize the health-promoting potential of the UGS. This review highlights the multifaceted benefits of UGS and emphasizes the importance of strategic urban planning and design in creating healthier and more resilient cities.

Keywords: urban green spaces, human health, physical activity, mental health, social connections, urban planning.

**INTRODUCTION**

Urban green spaces (UGS) encompass areas with vegetation, including parks, gardens, squares, and other landscaped settings, within cities. These areas play a crucial role in urban planning because of the wide range of ecological, social, and health advantages they offer. The significance of UGS is rooted in its capacity to improve urban sustainability and public health. They play a vital role in climate regulation by alleviating the urban heat island effect, a situation where urban regions are warmer than their rural counterparts because of human activities.(Jha *et al*., 2024). Urban green areas offer vital ecosystem services, including pollination, water retention, and enhancement of air quality, which are essential for sustaining biodiversity and decreasing pollution.(Green *et al*., 2015). Moreover, urban green areas play a crucial role in encouraging physical exercise, enhancing mental health, and fostering social bonds among the city dwellers. These spaces serve as a break from the cityscape, offering opportunities for leisure, unwinding, and socializing, thereby elevating the overall quality of life.(Ullah *et al*., 2020; Paul and Nagendra, 2017). The presence of UGS has been linked to better mental health outcomes and increased physical activity, thereby reducing the stress levels of urban dwellers (Paul and Nagendra, 2017). Moreover, UGS contribute to promoting social equity in urban areas. Nonetheless, their presence in cities can be uneven, affecting how different socioeconomic groups access and enjoy these spaces.(Huang *et al*., 2020). Ensuring that all city dwellers have fair access to green spaces is essential for them to enjoy the environmental and health benefits these areas offer.(Jha *et al*., 2024). Recognizing the wide-ranging advantages, urban planners and policymakers have prioritized the incorporation and expansion of green spaces as essential elements within city landscapes. This strategy not only fosters ecological diversity but also bolsters the resilience and habitability of urban areas amidst climate change and swift urban growth.(Hansen *et al*., 2022).

Urbanization has a profound effect on human health through various beneficial and detrimental channels. The swift alteration of landscapes due to urban growth influences socio-economic conditions, environmental aspects, and health results.(Kuddus *et al*., 2020). One significant issue is the effect on public health resulting from changes in environmental conditions and lifestyle choices. Urban regions frequently encounter challenges, such as a rise in land surface temperature (LST) due to decreased vegetation and increased development, which can lead to heat stress and associated health problems. (Cetin *et al*., 2023). The impact of urban microclimates calls for more sustainable urban planning to reduce the health risks linked to these changes. Additionally, social inequalities are exacerbated in cities, where access to resources, such as healthcare and green spaces, can differ greatly among various socioeconomic groups. (Kuddus *et al*., 2020). These inequalities can intensify health disparities, with marginalized groups frequently facing poorer health outcomes. The interaction between humans and wildlife in urban areas, as humans encroach on natural habitats, can result in the emergence of new diseases. (Hassell *et al*., 2020). Integrating urban planning with biodiversity conservation is essential for reducing health hazards and enhancing ecosystem services that support human health. Urban green spaces (UGS) offer significant advantages for both mental and physical well-being, such as lowering stress levels and boosting health. (Bressane *et al*., 2024). The natural quality of these areas is crucial, as being in more natural settings is associated with reduced mental distress. (Bressane *et al*., 2024). Urban regions that offer ample green spaces and incorporate blue-green infrastructure have beneficial effects on the health of their inhabitants. These environments enhance both physical and mental well-being, foster social connections, and improve community welfare. (Wang *et al*., 2022). Nonetheless, studies indicate that it is essential to engage in strategic planning to guarantee fair access to these areas for various demographic groups. (Bressane *et al*., 2024). Additionally, urbanization is linked to alterations in the gut microbiota, impacting early developmental stages and possibly resulting in diverse health outcomes later in life. (Brushett *et al*., 2020). These changes highlight the significance of understanding how urban living conditions interact with biological health processes. In general, urbanization demands a thorough and informed strategy to address its complex impacts on human health. To reduce the negative health effects linked to urban living, it is crucial to implement policies that encourage sustainable urban development, fair resource allocation, and integration with natural environments. (Kuddus *et al*., 2020; Eckert & Kohler, 2014).

Urban green areas are vital for improving human health, providing numerous physical, mental, and social advantages. From a physical standpoint, these spaces create settings that encourage exercise, which can notably decrease the health problems associated with inactive lifestyles. For example, city parks equipped with various recreational amenities promote greater physical activity, especially among children, resulting in enhanced public health. (Bao *et al*., 2023). Furthermore, the particular characteristics of urban greenways, including a variety of plants and pleasant pathways, have been demonstrated to enhance physical health metrics, such as blood pressure. (Cao *et al*., 2024). Psychologically, green areas are recognized for their ability to reduce stress and enhance the well-being of the residents. Research shows that spending time in urban green spaces can lessen mental strain and boost overall life satisfaction, underscoring the mental advantages of residing in vegetated regions. (White *et al*., 2013).

Moreover, urban parks have been demonstrated to contribute positively to mental health by providing a natural environment for unwinding and a respite from city life, both of which are essential for restoring mental well-being. (Cao *et al*., 2024). Green areas promote social connections and engagement, which can positively affect mental well-being, particularly among seniors. (Zheng *et al*., 2024). In the societal context, urban green spaces function as shared areas that promote social unity and community engagement. They provide venues for individuals to participate in leisure activities, connect with others, and reinforce social ties, thereby improving social welfare in urban settings. (Ullah *et al*., 2020). The availability and security of these areas are essential for optimizing their utilization and ensuring that they function as welcoming environments for every community member. (Lopez *et al*., 2020).

**METHODS**

In this examination, the authors concluded with 20 publications sourced from the Web of Science, Scopus, PubMed, and Google Scholar databases. These 20 studies were noted for their extensive citations across various research. By June 2025, these publications accumulated a total of 3216 citations. Table 2 presents the citation specifics for each paper.

Papers were chosen based on titles, keywords, abstracts, and conclusions. A variety of primary and secondary sources were employed, such as books and reports. Google Scholar served as a key resource for gathering a significant number of research articles. Targeted search strings were used to locate pertinent articles . These four databases offer an Advanced Search Tool, facilitating the process of finding relevant results efficiently. The data searched was compiled according to the study themes and stored in the system e-library. For identifying pertinent literature, retrieval queries were formulated. Initially, pertinent literature was located and gathered using the specified keywords in Table 1:

The expressions 'green space' and 'public open space' were considered interchangeable and assumed to mean the same thing. We examined health effects in a comprehensive manner, encompassing not only physical health but also mental health and overall well-being. This approach was intended to illustrate the different proposed mechanisms through which green spaces are thought to influence health outcomes, such as drawing individuals in, offering opportunities for physical activity, or inducing a restorative effect. (Takano, 2002)

This literature review was finalized in June 2025. A total of five hundred and thirty-seven articles were first evaluated for their relevance. From this, twenty pertinent articles were selected and assessed for the strengths and weaknesses in their methodologies and interpretations. Subsequently, these articles were rated based on the robustness of the evidence provided (Tables 1–3).

**Table 1.** Queries used for searching the data

|  |  |
| --- | --- |
| Databases | Keywords |
| PubMed | ((“urban green spaces” OR “city parks” OR “mental health OR well-being” OR “green spaces” OR “urban forests” OR “physical activity” OR “exercise” OR “urban green spaces” OR “green infrastructure” OR “air quality” OR “climate change” OR “urban green spaces OR green spaces” OR “human health” OR “well-being” OR “urban parks” OR “health benefits” OR “ecosystem services”)) |
| Scopus | ((“urban green spaces” OR “city parks” OR “mental health OR well-being” OR “green spaces” OR “urban forests” OR “physical activity” OR “exercise” OR “urban green spaces” OR “green infrastructure” OR “air quality” OR “climate change” OR “urban green spaces OR green spaces” OR “human health” OR “well-being” OR “urban parks” OR “health benefits” OR “ecosystem services”)) |
| Web of Science | ((“urban green spaces” OR “city parks” OR “mental health OR well-being” OR “green spaces” OR “urban forests” OR “physical activity” OR “exercise” OR “urban green spaces” OR “green infrastructure” OR “air quality” OR “climate change” OR “urban green spaces OR green spaces” OR “human health” OR “well-being” OR “urban parks” OR “health benefits” OR “ecosystem services”)) |
| Google Scholar | ((“urban green spaces” OR “city parks” OR “mental health OR well-being” OR “green spaces” OR “urban forests” OR “physical activity” OR “exercise” OR “urban green spaces” OR “green infrastructure” OR “air quality” OR “climate change” OR “urban green spaces OR green spaces” OR “human health” OR “well-being” OR “urban parks” OR “health benefits” OR “ecosystem services”)) |

**DATA EXTRACTION**

Data extraction took place in June 2025 after a thorough review of the entire study, which encompassed the abstract, conclusion, and future directions. Following this comprehensive examination, themes and subthemes were discerned from the final selection of studies. The data gathered were systematically recorded in a tabular format based on the five subthemes (Physical Health Benefits, Mental Health Benefits, Social Benefits, Mechanisms Underlying the Health Benefits of UGS, Design and Planning Implications) of the research. Consequently, the collected data were structured according to these subthemes.

Table 2. Summary of review on urban green space and human health

|  |  |  |  |
| --- | --- | --- | --- |
| Study | Citations | Study design | Findings |
| (Lovell *et al*., 2014) | 48 | Systematic review methodology will be used. | Community gardening has a beneficial effect on health and well-being. |
| (Wang *et al*., 2022) | 4 | The research examines the effects of urban blue-green spaces (UBGS) on health. | Urban blue-green spaces (UBGS) have a direct and indirect impact on the health of residents. |
| (Gu *et al*., 2022) | 15 | The analysis encompassed 19 studies focused on small-scale greening to alleviate stress. | Engaging positively with indoor plants alleviates physiological stress. |
| (Lin *et al*., 2018) | 61 | The document examines the contribution of urban gardens to the promotion of biophilia. | Gardens establish secure environments for physical engagement with the natural world. |
| (Santos *et al*., 2021) | 43 | Air pollution in the environment has a considerable effect on health and raises death rates. | It worsens respiratory, cancerous, and metabolic conditions. |
| (Festa *et al*., 2023) | 25 | The analysis examines both short-term and long-term physical exercise and its impact on cognitive function. | Engaging in physical exercise enhances cognitive abilities, focus, memory, and executive functions. |
| (Kelishadi and Poursafa, 2010) | 108 | Urbanization leads to heightened air pollution and health issues in developing nations. | Economic and social elements affect health results associated with air pollution. |
| (Mahindru *et al*., 2023) | 185 | The review examines research from India regarding the impact of exercise on mental health. | Engaging in physical activity has a beneficial impact on mental well-being and lowers the incidence of illness. |
| (Alexandratos *et al*., 2012) | 70 | The examination outlines the impact of physical activity on mental well-being and overall life quality. | Physical activity enhances life satisfaction by fostering social connections and promoting a sense of empowerment. |
| (Eckert & Kohler, 2014) | 184 | The article examines the effects of urbanization on health in developing nations. | Urbanization has a positive but not substantial effect on life expectancy. |
| (Ullah *et al*., 2020) | 37 | Green parks enhance urban residents' well-being. | Urban green spaces enhance well-being and support health in urban areas |
| (Kuddus *et al*., 2020) | 276 | The document addresses public health challenges in metropolitan regions. | Urbanization results in considerable disparities and health issues among diverse populations. |
| (Bălă *et al*., 2021) | 160 | The review outlines the effects of air pollutants on respiratory illnesses. | Air pollution has a considerable effect on respiratory illnesses such as tuberculosis and lung cancer. |
| (Lopez *et al*., 2020) | 49 | Survey indicates a growing significance of green areas for mental well-being. | Participants placed greater importance on urban green areas for their health throughout the pandemic. |
| (Aram *et al*., 2019) | 423 | The article examines research on the cooling impacts of urban green spaces. | Urban green areas play a crucial role in diminishing the impacts of urban heat islands. |
| (Wallbanks *et al*., 2024) | 3 | The assessment investigates the impact of air pollution on respiratory health. | Air pollution in the environment poses a serious threat to respiratory health worldwide. |
| (Brushett *et al*., 2020) | 15 | The document outlines several elements linked to urban growth that influence health results. | Urbanization affects the methods of delivery, nutritional practices, and medication utilization among infants. |
| (Jabbar *et al*.,2021) | 164 | It analyzes 46 well-cited studies on the topic. | Richness of tree species boosts psychological well-being. |
| (Lee & Maheswaran, 2010) | 1234 | The article examines several quantitative research studies regarding environmental effects. | Green areas influence psychological well-being and community integration. |
| (Ramaiah & Avtar, 2019) | 112 | Urban development affects both green areas and the management of wastewater in India. | Urban green areas (UGA) reduce the impacts of climate change and enhance air quality. |

**RESULTS**

Through physical, psychological, and social channels, urban green areas (UGS) dramatically improve human health, as the review points out. Better air quality in green surroundings lowers respiratory diseases, while park access encourages physical activity therefore fighting obesity and related diseases. Green areas improve cognition, lift mood, and lower stress psychically. Socially, parks and community gardens encourage engagement, help to lower loneliness, and help to improve neighborhood cohesiveness. Among the underlying processes are biophilia, stress alleviation theory, and attention restoration theory. Especially in quickly urbanizing regions, fair access to green spaces and good urban planning are vital for maximizing these advantages across all population groups.

**MEDIATIONS**

Through linked physical, mental, and social processes, urban green spaces improve health. Biophilia builds emotional ties with nature, lowering stress and improving well-being. According to the Stress Reduction Theory, natural surroundings calm the autonomic nervous system, hence reducing anxiety and blood pressure. Offering mentally restorative surroundings, green areas help to restore cognitive focus according to Attention Restoration Theory. Promoting social interactions and physical exercise, community gardens and parks act as moderating environments that shield against health hazards. These intermediary channels highlight the necessity of fair and deliberate urban planning to guarantee everyone benefits from green area exposure and its combined health effects.

**FINDINGS**

The reviewed studies were categorized under the following five sub-themes of Human Health:

**PHYSICAL HEALTH BENEFITS**

Decreased air pollution significantly benefits respiratory health, as evidenced by numerous studies. It is widely recognized that air pollution encompasses various harmful contaminants, such as particulate matter, nitrogen dioxide, sulfur dioxide, and volatile organic compounds, all of which can worsen respiratory conditions like chronic obstructive pulmonary disease (COPD), asthma, and lung cancer. (Bălă *et al*., 2021). When air quality improves, the frequency of respiratory infections and the worsening of chronic respiratory illnesses decline. For instance, a drop in air pollutants has been linked to fewer hospitalizations for respiratory diseases and diminished symptom severity in individuals with existing conditions, such as asthma and COPD. (Pompilio and Bonaventura, 2020). Furthermore, air contaminants, including ozone and particulate matter, can trigger inflammation in the respiratory system, increasing susceptibility to viral infections, such as those caused by the respiratory syncytial virus and influenza. Thus, enhancing air quality can alleviate these inflammatory reactions, which in turn lowers the frequency and severity of these infections. (Loaiza-Ceballos *et al*., 2021). Moreover, it is not only respiratory illnesses that benefit from decreased air pollution. There are also significant drops in healthcare expenses due to the lower occurrence of outpatient and emergency services connected to respiratory problems. In a particular financial analysis, it was revealed that enhancing air quality could substantially lower national health spending by minimizing the medical costs associated with diseases caused by air pollution. (Liu & Ao, 2021). The impact of diminished air pollution is especially significant for at-risk groups, such as the elderly and children, who tend to be more sensitive to the harmful health effects of air contaminants. For instance, in children, exposure to air pollution is associated with lower birth weights and ongoing health issues, highlighting the necessity of upholding clean-air regulations to safeguard younger generations. (Kelishadi and Poursafa, 2010). In summary, lowering air pollution brings considerable health advantages by reducing the prevalence of respiratory illnesses, reducing the incidence of infections, and decreasing healthcare costs associated with respiratory well-being. These advancements not only improve personal health outcomes but also advance wider public health goals by minimizing the societal repercussions linked to diseases caused by air pollution. (Wallbanks *et al*., 2024; Santos *et al*., 2021).

Elevated levels of physical activity are crucial for tackling obesity and enhancing general health, extending beyond the direct impact of shedding pounds. Consistent engagement in physical exercise helps decrease abdominal fat, visceral fat, and various cardiometabolic risk factors while simultaneously boosting skeletal muscle mass and cardiorespiratory endurance. (Ross & Bradshaw, 2009). These advantages can be realized by implementing lifestyle change initiatives that integrate exercise with a nutritious diet, both of which are essential for effective management of obesity. (Strasser, 2012). Although the impact of exercise on immediate weight reduction may be limited, typically resulting in an extra 2-3 kg loss, its advantages go far beyond what is shown on a scale. Engaging in physical activity enhances the cardiometabolic risk profile, reduces abdominal visceral fat, and increases insulin sensitivity. Additionally, it improves cardiorespiratory fitness, which is crucial for reducing health risks associated with obesity. (Oppert *et al*., 2025; Oppert *et al*., 2023). Additionally, engaging in physical exercise is essential for sustaining weight loss and increasing lean body mass, even with the use of antiobesity drugs. Resistance training plays a key role in maintaining muscle mass, which is important for metabolic health during weight loss. (Grosicki *et al*., 2024). Exercise programs yield the greatest benefits when they incorporate elements of both aerobic and resistance training, thereby enhancing cardiovascular and muscular well-being. (Oppert *et al*., 2023). Within the larger framework of health-related quality of life (HRQL), engaging in physical activity is a crucial element that affects the results, regardless of an individual's weight classification. Regular exercise enhances HRQL, implying that the health advantages of consistent physical activity may surpass those linked exclusively to weight loss. (Herman *et al*., 2012). Evidence suggests that higher fitness and physical activity levels are linked to a lower risk of mortality, regardless of body mass index. (Pedersen, 2007). Consequently, although weight loss is a factor in managing obesity, the overall health advantages of engaging in physical activity must be highlighted. Motivating people to participate in consistent physical activity can result in significant enhancements in health outcomes, irrespective of its direct influence on weight reduction. (Pacy *et al*., 1986).

**MENTAL HEALTH BENEFITS**

Physical activity significantly affects mental health and well-being, impacting a wide range of psychological outcomes. Consistent exercise has been linked to numerous mental health benefits, such as lower stress and anxiety levels, improved mood, enhanced cognitive abilities, and an overall elevated quality of life. First, exercise is crucial for alleviating symptoms of depression and anxiety. It is beneficial in controlling mild to moderate mental health issues, such as depression, primarily because it boosts the release of neurotransmitters and neurotrophic factors that support brain health. (Festa *et al*., 2023). Exercise therapy is frequently suggested for those experiencing different mental health issues because it can greatly enhance mood and reduce symptoms associated with anxiety and depression. (Mahindru *et al*., 2023; Paluska & Schwenk, 2000).

Additionally, the beneficial effects of physical activity encompass enhancements in cognitive abilities. Engaging in exercise has been associated with improved cognitive functions, such as attention, memory, and executive functions. These enhancements are believed to stem from alterations in brain structure and function, including increased gray matter volume and changes in the brain networks that manage cognitive tasks. (Festa *et al*., 2023). These brain adjustments assist in preserving mental function and counteracting the cognitive decline associated with aging. Beyond the advantages for thinking and emotions, consistent physical activity enhances individuals' quality of life by fostering a feeling of empowerment and control over health issues. For those experiencing significant mental health challenges, engaging in exercise has demonstrated improvements in symptoms, sleep habits, and social connections, leading to an overall enhancement in quality of life. (Alexandratos *et al*., 2012). Social skills and engagement fostered through group activities can play a role in these enhancements, particularly for older individuals who might benefit from participation in community-focused initiatives. (Hou *et al*., 2024). Additionally, engaging in physical exercise not only helps address current mental health problems but also plays a role in averting the onset of new conditions. For young people, consistent involvement in sports and physical activities is associated with a decreased likelihood of developing mental health disorders. (Kauczor-Rieck *et al*., 2024).

Considering these advantages, integrating consistent physical activity into daily life is recommended as an effective approach to enhance mental health and psychological wellness. Extensive research highlights the diverse functions of exercise, serving not only as an adjunct treatment for mental health issues but also as a preventive strategy for the broader community. (Fox, 1999).

**SOCIAL BENEFITS**

Community gardening provides various social advantages that strengthen social ties, promote a sense of belonging, identity, and support, and ultimately mitigate feelings of isolation. Research emphasizes the significant effects of community gardening in encouraging these benefits.

**Enhanced Social Ties and Community Participation:** Community gardens act as social centers where people can connect, work together, and form bonds. They create an environment for collective activities and objectives and nurture a profound sense of community. Research indicates that community gardens strengthen social connections and community unity, frequently serving as central locations for community involvement and engagement. (Wakefield *et al*., 2007). Engaging in gardening activities fosters regular social interaction and a sense of belonging among community members, thereby establishing a supportive network. (Gray *et al*., 2022).

**Enhanced Sense of Place and Identity:** Community gardens play a significant role in place-making, allowing individuals to cultivate feelings of belonging and identity through their involvement in gardening. They offer a distinctive opportunity to engage with nature, motivating participants to take pride in their local surroundings and community. (Truong *et al*.,2022). For those living in cities, community gardens foster a sense of belonging that goes beyond conventional urban life, enabling connections with nature and the larger community to be made. (Mcguire *et al*., 2022).

**Enhanced Social Support and Reduced Feelings of Loneliness:** The collaborative aspect of gardening naturally cultivates support systems among those involved, which play a vital role in mental health. Participating in a community garden creates an environment of camaraderie, collective experiences, and reciprocal assistance, significantly diminishing sensations of seclusion and loneliness. (Wang & Macmillan, 2013). In addition, it enables people to participate in significant activities that enhance their well-being while fostering supportive community connections. (Lovell *et al*., 2014).

Community gardening serves as a diverse strategy that fosters environmental responsibility and greatly enhances the social and mental health of those involved. It cultivates inclusive communities by encouraging physical health, social interactions, and emotional strength. (Okvat and Zautra, 2011; Al-Delaimy and Webb, 2017).

**MECHANISMS UNDERLYING THE HEALTH BENEFITS OF UGS**

Urban green spaces offer numerous health advantages via different pathways. Important theories and mechanisms consist of the following:

Biophilia and Nature Connectedness: The biophilia hypothesis suggests that humans possess an inherent bond with nature. This relationship can strengthen health-promoting advantages, including stress reduction and social cohesion. Urban gardens can promote biophilia by boosting encounters and favorable interactions with nature and nurturing emotional ties that improve overall well-being. (Lin *et al*., 2018; Stoltz and Schaffer, 2018).

Stress Reduction Theory: UGSs are recognized for their ability to diminish stress by fostering direct interaction with natural surroundings, which can ease psychosocial tension. Studies indicate that even minor amounts of greenery can yield notable stress-relief advantages, as evidenced by indicators such as decreased blood pressure across different demographics. (Gu *et al*., 2022; Huang *et al*., 2021).

Attention Restoration Theory: Interaction with natural settings can facilitate recovery from mental fatigue, as research indicates that areas rich in plant diversity and free from urban disturbances foster cognitive rejuvenation. (Huang *et al*., 2021). This concept proposes that the natural environment serves as a healing backdrop, providing relief from the exhausting pressures of a concentrated focus.

**DESIGN AND PLANNING IMPLICATIONS**

The creation and organization of urban green spaces (UGS) play vital roles in improving accessibility, quality, and visual appeal while fostering sustainable city environments. The significance of UGS is rooted in its diverse advantages, including better air quality, decreased urban heat, and the promotion of both physical and mental well-being. (Ullah *et al*., 2020; Jha *et al*., 2024). Urban planners and designers are crucial for embedding these areas within urban structures to enhance their accessibility and functionality. (Huang *et al*., 2020; Tannous *et al*., 2020). In terms of accessibility, efficient urban planning should guarantee that urban green spaces are fairly allocated throughout various regions of a city, particularly in densely populated neighborhoods, to tackle socioeconomic inequalities. (Arshad & Routray, 2018; Jha *et al*., 2024). The application of Geographic Information Systems (GIS) and space syntax can assist in assessing spatial and accessibility elements to guarantee the equitable distribution and planning of UGS. (Huang *et al*., 2020; Tannous *et al*., 2020). Urban planning methods designed to enhance UGS in urban settings may include the transformation of neglected land into green spaces. Quantitative analysis and remote sensing can aid in pinpointing appropriate locations for development, factoring in elements such as land utilization, population density, and current infrastructure. (Liu & Li, 2023; Gelan, 2021). Moreover, spatial equilibrium models can evaluate the socioeconomic effects of green spaces, facilitating their integration in a way that ensures that these areas are supportive and improve the attractiveness of urban locales without increasing housing expenses. (Li *et al*., 2024). Moreover, integrating nature-inspired solutions into urban development can assist in controlling urban expansion and increasing cities' resilience to climate change by improving microclimates and regulating urban heat islands. (Aram *et al*., 2019). To achieve the best outcomes, a combination of public parks, street greenery, and community green areas should be created to establish a network of green spaces that meet various urban requirements. (Li *et al*., 2024).

**Table 3. Major cities of india with per capital green space**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| City | Population in Millions | Population Density (km−2) | Geographical Area (km2 ) | Green Cover % (in km2 ; 2017) | Per Capita Green Space (m2 ; 2018) |
| Delhi | 28.50 | 12,591 | 1484.00 | 20.00 (296.80) | 10.41 |
| Mumbai | 23.50 | 20,482 | 603.00 | 36.48 (220.00) | 9.36 |
| Kolkata | 15.20 | 24,400 | 1380.00 | 7.30(100.74) | 6.61 |
| Bangalore | 13.90 | 4381 | 2196.00 | 2.09(46.03) | 3.31 |
| Hyderabad | 11.57 | 18,480 | 650.00 | 1.66(10.79) | 0.93 |
| Chennai | 9.88 | 14,350 | 1189.00 | 15.00(178.35) | 18.05 |
| Ahmedabad | 8.41 | 9900 | 464.00 | 17.00(78.88) | 9.38 |
| Surat | 6.55 | 1376 | 326.50 | 11.84(38.66) | 5.90 |
| Gandhinagar | 6.33 | 660 | 649.00 | 54.00(188.46) | 29.77 |
| Jaipur | 3.71 | 598 | 467.00 | 5.43(24.75) | 6.67 |
| Nagpur | 2.94 | 11,000 | 285.90 | 18.00(51.42) | 17.49 |
| Mysore | 1.70 | 6911 | 128.40 | 20.19(25.92) | 15.25 |
| Chandigarh | 1.05 | 9252 | 114.00 | 35.00(39.90) | 38.00 |

**Source:** (Ramaiah & Avtar, 2019)

**Discussion**

Incorporating results from several studies, this review emphasizes the many health advantages urban green areas (UGS) offer and shows their great influence on physical, emotional, and social well-being. The evidence indicates that UGS help to solve non-communicable diseases and climate-related health hazards by improving air quality, promoting physical activity, and reducing the effects of urban heat islandsmaking them essential tools. Theories like biophilia, the Stress Reduction Theory, and the Attention Restoration Theory provide great support for the mental health benefits of including cognitive restoration, improved mood, and stress reduction. Furthermore, UGS provide special chances for local contact and support especially via projects like community gardening, therefore improving social cohesion and decreasing loneliness.

Although naturalistic designs produce more restorative advantages, it is also clear that public health is greatly enhanced by even limited vegetation. This highlights the need of both big parks and smaller, dispersed green initiatives throughout communities. Moreover, combining UGS with more general urban planning techniques including housing, public health policies, and transportation will help to maximize their benefits and advance sustainable urban life.

Beyond physical well-being, urban vegetation is necessary for mental health. Interactions with nature help to relieve tension, lower anxiety, and improve cognitive performance (Mahindru *et al*., 2023; Festa *et al*., 2023). The theories of Biophilia, Stress Reduction Theory, and Attention Restoration Theory—which explain the restorative impact of natural environments on the human mind—support these effects (Lin *et al*., 2018; Gu *et al*., 2022; Huang *et al*., 2021).

Access to green areas is still unequal among various socio-economic classes despite these advantages. By means of equal distribution of UGS, urban planning has to solve spatial and social disparities. Critical observations for locating under-served areas and maximizing green space placement come from tools like space syntax and GIS (Huang *et al*., 2020; Tannous *et al*., 2020).

Beyond appearances and entertainment, UGS in urban development should be a foundation of environmental and public health policy. Including urban greenways and green infrastructure, nature-based solutions help cities to adjust to climate change, reduce urban heat islands, and promote biodiversity (Aram *et al*., 2019; Bressane *et al*., 2024).

**CONCLUSION**

As promoters of human health and well-being in physical, mental and social dimensions, urban green areas (UGS) play a multilayered and essential role. This review collates a large body of evidence that access to green environments significantly enhances mental health throughout, increases physical activity, reduces respiratory diseases, and contributes to social cohesiveness. The health-positive effects of natural environment in urban regions are further enhanced by underlying processes such as biophilia, stress relief, and attention recovery.

In densely populated or socio-economically vulnerable urban areas, in particular, it remains a significant challenge to ensure that UGS are equally accessible. Through instruments such as GIS, space syntax or nature-based solutions, these inequities can be lessened thanks to informed, inclusive urban design. This will provide multiple health co-benefits from green infrastructure. Equally vital for creating healthier, eco-friendly, and more resilient urban environments will be the integration of UGS with broader city systems such as health, housing and transport.

In essence, public health infrastructure relies on urban green areas rather than on purely visual improvements. Achieving whole health results, environmental sustainability, and better quality of urban life in the face of increasing urbanization and climate issues depends on their deliberate and just integration into city planning.

**FUTURE DIRECTION**

Longitudinal and cross-discipline studies should be the center of future research to help us to better grasp the long-term health effects of urban green areas (UGS). Using GIS-based spatial analysis, especially in neglected areas, initiatives must give equal access first priority. Including UGS with biodiversity objectives, public health policy, and climate resilience will improve their multifunctional value. Design and maintenance community involvement might increase inclusivity and efficiency. Furthermore, real-time monitoring should be made using developing technologies including mobile data and remote sensing. Basically, strategic urban design has to fully integrate UGS to advance health-optimized, resilient, and sustainable cities.

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