

THE ROLE OF GREEN SPACES IN ENHANCING RESIDENTS' SUBJECTIVE WELL-BEING IN URBAN COMMUNITIES

Chake Lam

Centre for Urban Economics & Real Estate, The University of British Columbia, Vancouver BC V6T 1Z4, Canada.

Corresponding Email: Chakilam24@sauder.ubc.ca

Abstract: Urbanization has dramatically transformed the landscapes of cities worldwide, often resulting in a decline of natural environments and an increase in stressors that negatively impact residents' mental and emotional well-being. This paper investigates the role of green spaces—such as parks, gardens, and recreational areas—in enhancing the subjective well-being of residents in urban communities. Through a mixed-methods research design, the study combines quantitative and qualitative approaches to explore how the availability and quality of green spaces influence life satisfaction, stress reduction, and social connectivity among community members. The quantitative component involves surveys distributed across diverse urban neighborhoods, assessing subjective well-being using standardized measures and evaluating green space characteristics through Geographic Information Systems (GIS). The qualitative component includes semi-structured interviews and focus groups that provide in-depth insights into residents' experiences and perceptions of green spaces. Findings indicate that access to high-quality green areas significantly contributes to improved mental health outcomes and fosters a sense of community belonging. The paper emphasizes the necessity of integrating green spaces into urban planning and policy to promote healthier, more resilient communities. By highlighting the multifaceted benefits of green spaces, this research aims to inform sustainable urban development practices that prioritize the well-being of urban residents.

Keywords: Green spaces; Subjective well-being; Urban communities

1 INTRODUCTION

Urbanization has significantly reshaped the physical and social landscapes of cities around the globe, often leading to a decline in natural environments and an increase in stressors associated with urban living. The rapid expansion of urban areas has resulted in the displacement of green spaces, which are crucial for maintaining ecological balance and providing residents with essential recreational opportunities [1-5]. As cities grow denser and more populated, the importance of integrating green spaces—such as parks, gardens, and recreational areas—into urban planning has become increasingly evident. These spaces are not merely aesthetic enhancements; they serve as vital components of urban ecosystems that can profoundly influence the mental and emotional well-being of residents [6].

Research has shown that access to high-quality green areas can enhance life satisfaction, reduce stress, and foster social connections among community members [7]. The presence of green spaces allows individuals to engage in physical activities, relax, and connect with nature, all of which are beneficial for mental health. Moreover, these spaces can serve as social venues where residents gather, interact, and build relationships, further contributing to a sense of community and belonging [8]. In an age where urban life is often characterized by isolation and disconnection, green spaces provide a necessary antidote, promoting not only individual well-being but also community cohesion.

The objective of this paper is to explore how the availability and quality of parks and green spaces within urban neighborhoods influence residents' subjective well-being [9]. By synthesizing existing literature and empirical studies, this investigation will highlight the psychological benefits of green spaces, the role of social interactions facilitated by these environments, and the implications for urban policy and planning. The analysis will consider various factors, including socioeconomic status, demographic diversity, and the design characteristics of green spaces, all of which can affect how residents experience and benefit from these areas [10].

Ultimately, this paper aims to underscore the necessity of prioritizing green spaces in urban development to promote healthier, more resilient communities. As urban planners and policymakers grapple with the challenges of rapid urbanization, the findings of this study will advocate for a holistic approach that recognizes the multifaceted benefits of green spaces. By emphasizing the significance of these areas in enhancing residents' quality of life, this paper seeks to contribute to ongoing discussions about sustainable urban development and the creation of livable cities for all.

2 LITERATURE REVIEW

A growing body of research has examined the relationship between green spaces and residents' subjective well-being, revealing a complex interplay of psychological, social, and environmental factors. Kaplan and Kaplan introduced the Attention Restoration Theory (ART), which posits that natural environments help individuals recover from mental fatigue, thereby enhancing cognitive functioning and emotional health [11]. This foundational theory has spurred numerous studies demonstrating that exposure to green spaces can lead to reduced stress and improved mood [12]. The implications of ART extend beyond individual well-being, suggesting that urban environments designed with ample green spaces can create healthier communities overall [13].

Ulrich further emphasized the restorative effects of nature, revealing that individuals exposed to natural settings report lower levels of anxiety and greater feelings of tranquility [14]. His research laid the groundwork for subsequent investigations into the psychological benefits of green spaces, including a meta-analysis by Bowler, which concluded that access to natural environments is associated with increased happiness and reduced psychological distress [15]. These findings underscore the importance of integrating green spaces into urban environments as a means of promoting mental health.

The social dimensions of green spaces also play a crucial role in enhancing well-being [16]. Kuo found that parks serve as important social hubs, facilitating interactions among residents and fostering a sense of community [17]. These social connections are vital for mental health, as social support is a well-documented determinant of well-being [18-20]. The ability of green spaces to bring people together can help mitigate feelings of loneliness and isolation, particularly in urban settings where social disconnection is prevalent. Similarly, a study by Maass highlighted that not only the quantity but also the quality of green spaces — characterized by maintenance, accessibility, and biodiversity — significantly influences residents' well-being [21]. Well-maintained parks that offer diverse flora and fauna are more likely to attract visitors and encourage prolonged engagement, leading to greater psychological benefits [22-24].

Research has also demonstrated that green spaces can encourage physical activity, which is closely linked to mental health. A study by Mitchell and Popham found that individuals living in greener areas are more likely to engage in regular physical activity, which in turn contributes to improved mental well-being [25-28]. This finding is supported by further research indicating that parks and recreational areas can promote healthier lifestyles [29,30]. The presence of walking paths, sports facilities, and other amenities within green spaces can serve as motivators for residents to engage in physical activity, thereby enhancing both physical and mental health outcomes.

Despite the positive associations between green spaces and well-being, disparities in access to these resources exist, often influenced by socioeconomic factors. Research by Wolch indicates that low-income neighborhoods may have fewer and lower-quality green spaces, exacerbating health inequalities [31]. The lack of access to quality green spaces in these areas can lead to a cycle of disadvantage, where residents are deprived of the mental and physical health benefits that green spaces provide. Additionally, studies have shown that different demographic groups experience the benefits of green spaces differently, influenced by factors such as age, gender, and cultural background [32]. Understanding these disparities is crucial for developing equitable urban policies that ensure all residents can access and benefit from green spaces.

Moreover, the design and features of green spaces significantly impact their effectiveness in enhancing well-being. Research has shown that well-maintained parks with diverse flora and amenities attract more visitors and provide greater psychological benefits compared to neglected areas [33-36]. The presence of features such as walking paths, seating areas, and playgrounds can enhance the usability and appeal of green spaces, further promoting social interaction and community engagement [37]. Additionally, the integration of art, cultural elements, and educational opportunities within green spaces can enrich the experiences of visitors, making these areas more inviting and beneficial [38-40].

There is a strong link between green spaces and the mental and emotional well-being of urban residents [41]. As cities continue to grow and evolve, prioritizing the development and maintenance of high-quality parks and green areas is essential for enhancing residents' overall life satisfaction and fostering healthier communities [42,43]. Future research should address existing gaps by exploring the diverse experiences of different demographic groups and examining the long-term effects of green space accessibility on well-being [44,45]. By understanding the complex relationship between green spaces and well-being, urban planners and policymakers can make informed decisions that promote sustainable, inclusive, and vibrant urban environments.

3 METHODOLOGY

3.1 Research Design

This study employs a mixed-methods research design to explore the relationship between green spaces and residents' subjective well-being in urban communities. By integrating quantitative and qualitative approaches, the research aims to provide a comprehensive understanding of how the availability and quality of parks and green areas influence mental and emotional well-being. This dual approach allows for a more nuanced exploration of the topic, as quantitative data can reveal trends and correlations, while qualitative insights can illuminate the personal experiences and perceptions that underlie these trends. The combination of these methodologies ensures a robust analysis that captures both the statistical significance and the lived realities of residents.

3.2 Quantitative Component

3.2.1 Study area selection

The study will focus on several urban neighborhoods with varying levels of green space availability and quality. Neighborhoods will be selected based on criteria such as population density, socioeconomic status, and existing green space infrastructure. This selection process will involve a comprehensive review of demographic and environmental data to ensure a representative sample of urban communities. By including neighborhoods with differing characteristics, the research aims to uncover how variations in green space availability impact residents' well-being across diverse

contexts. The selection will also consider factors such as accessibility to public transportation and the presence of community organizations, which may further influence residents' engagement with green spaces as shown in Figure 1.

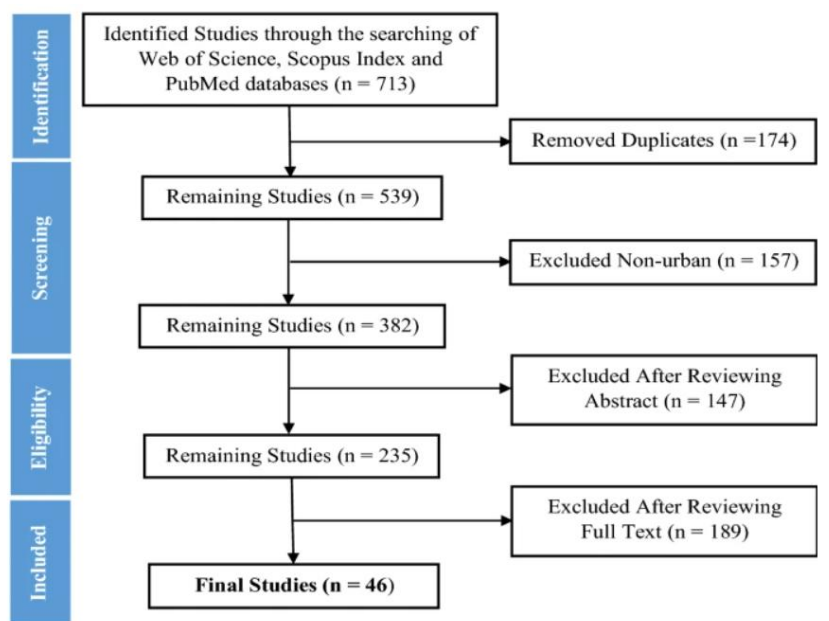


Figure 1 Selection Process of the Studies for the Review

3.2.2 Data collection

Surveys will be administered through a structured questionnaire distributed to residents within the selected neighborhoods. The survey will include standardized measures of subjective well-being, such as the Warwick-Edinburgh Mental Well-being Scale and the Satisfaction with Life Scale. These validated instruments will allow for a reliable assessment of participants' mental and emotional health. In addition to well-being measures, the survey will gather demographic information, including age, gender, income level, and length of residence in the neighborhood, to facilitate a comprehensive analysis of the data.

The availability and quality of green spaces will be assessed using Geographic Information Systems to analyze satellite imagery and local government data. This spatial analysis will involve evaluating metrics such as the number of parks, total park area, proximity to residential areas, and park amenities (e.g., walking paths, playgrounds, seating areas, and community gardens). By employing GIS technology, the study can provide a detailed understanding of how physical access to green spaces correlates with residents' well-being.

3.2.3 Statistical analysis

Data will be analyzed using statistical software. Descriptive statistics will summarize the demographic characteristics of respondents, providing a clear overview of the sample population. Inferential statistics, including regression analysis, will be employed to examine the relationship between green space availability and quality and residents' subjective well-being. This analysis will help identify significant predictors of well-being, allowing researchers to draw meaningful conclusions about the impact of green spaces. Additionally, correlation analyses may be conducted to explore the strength and direction of relationships between specific green space characteristics and well-being measures.

3.4 Qualitative Component

3.4.1 Interviews

Semi-structured interviews will be conducted with a subset of survey participants to gather in-depth insights into their experiences with green spaces. A purposive sampling strategy will be employed to ensure that participants represent a diverse range of perspectives, including variations in age, socioeconomic status, and frequency of green space use. Interview questions will focus on how residents perceive and utilize green spaces, the emotional and psychological benefits they derive from these areas, and any challenges they face in accessing or enjoying these spaces. The semi-structured format will allow for flexibility in responses, encouraging participants to elaborate on their thoughts and feelings while ensuring that key topics are addressed.

3.4.2 Focus groups

Focus group discussions will be organized to facilitate dialogue among residents about their views on community green spaces. These discussions will explore themes such as social interactions, community cohesion, and barriers to accessing green areas. By bringing together residents in a group setting, the focus groups will encourage participants to share their experiences and opinions, fostering a collaborative environment for discussion. The interactions among

participants may also reveal collective insights about the role of green spaces in their lives, highlighting shared challenges and potential solutions. Each focus group will be guided by a facilitator who will ensure that all voices are heard and that the conversation remains focused on the research objectives.

3.4.3 Thematic analysis

Qualitative data from interviews and focus groups will be analyzed using thematic analysis, identifying recurring themes and patterns related to residents' experiences and perceptions of green spaces. Thematic analysis will involve several stages, including familiarization with the data, coding, and the identification of overarching themes that emerge from the qualitative responses. This approach will allow researchers to distill complex narratives into meaningful insights that reflect the diverse experiences of residents. The analysis will also consider the context in which these experiences occur, providing a richer understanding of how green spaces contribute to well-being in urban environments. The findings from the qualitative component will complement the quantitative results, offering a holistic view of the relationship between green spaces and residents' subjective well-being.

By employing this mixed-methods approach, the study aims to provide a comprehensive understanding of the multifaceted relationship between green spaces and well-being in urban communities. The integration of quantitative and qualitative data will facilitate a thorough exploration of how the availability, quality, and use of green spaces can enhance the mental and emotional health of residents, ultimately informing urban planning and policy decisions aimed at fostering healthier, more vibrant communities.

4 CASE STUDY

4.1 Case Study Selection

For the case study, we will focus on New York, a vibrant metropolitan area recognized for its diverse neighborhoods and the varying availability of green spaces. This city has made significant investments in urban greening initiatives, making it an ideal setting for examining the role of green spaces in enhancing residents' well-being. Figure 2 shows that the selection of neighborhoods within the city allows for a comparative analysis that highlights the impact of green space availability on subjective well-being across different socioeconomic contexts.

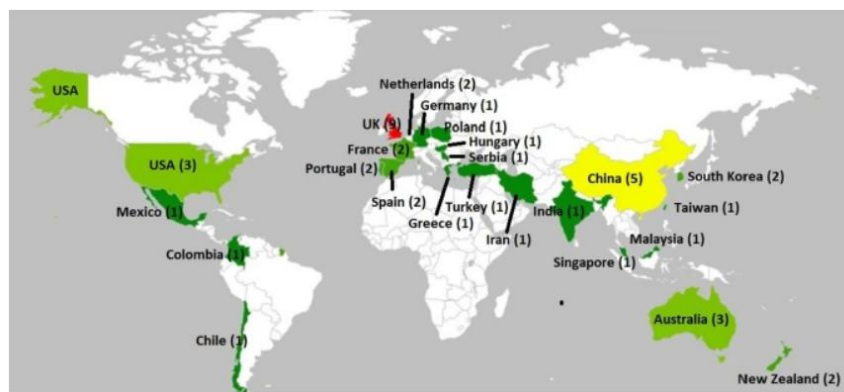


Figure 2 Spatial Distribution of Reviewed Studies

4.1.1 Neighborhood A

Characteristics: Neighborhood A is characterized by a high availability of green spaces, featuring several large parks, community gardens, and recreational facilities. These green spaces are well-maintained and equipped with amenities such as walking trails, playgrounds, and picnic areas, which encourage active use by residents. The parks in this neighborhood often host community events, such as farmers' markets and outdoor movie nights, fostering a sense of belonging and community spirit among residents.

Demographics: The demographic profile of Neighborhood A is predominantly middle-income families who have established strong community ties. Many residents have lived in the area for several years, contributing to a cohesive social fabric. The presence of schools, local businesses, and community organizations further enhances the neighborhood's livability, creating an environment where residents feel safe and supported [46]. This stability and engagement likely contribute to higher levels of life satisfaction and well-being among residents.

4.1.2 Neighborhood B

Characteristics: In contrast, Neighborhood B exhibits limited access to green spaces, with only small pocket parks available for public use. These parks are often underutilized due to their size and lack of amenities, making it difficult for residents to engage in recreational activities. The limited green space availability may also contribute to feelings of confinement and stress among residents, as they have fewer opportunities to connect with nature and engage in outdoor activities.

Demographics: The demographic composition of Neighborhood B is diverse, featuring a mix of low-income families

and transient populations. Many residents face challenges related to social cohesion, as economic instability and frequent relocations hinder the development of lasting relationships. This neighborhood may experience higher levels of social isolation and stress, which can negatively impact overall well-being. The lack of accessible green spaces may exacerbate these issues, as residents have fewer opportunities for community engagement and relaxation.

4.1.3 Neighborhood C

Characteristics: Neighborhood C presents a moderate availability of green spaces, with several parks that are currently undergoing community-led efforts to enhance their quality. These initiatives may include landscaping projects, the installation of new playground equipment, and the organization of community events aimed at revitalizing the parks. While the existing green spaces may not be as extensive as those in Neighborhood A, the ongoing improvements reflect a commitment to fostering a healthier environment for residents as shown in Table 1.

Quota	Groups	Number of Respondents (%)	Total
Age	20–29	97 (24.3)	400
	30–39	97 (24.3)	
	40–49	110 (27.5)	
	50–59	96 (24.0)	
Gender	Male	200 (50.0)	400
	Female	200 (50.0)	

Table 1 Sampling Quota by Age and Gender Groups

Demographics: The demographic profile of Neighborhood C is notably diverse, encompassing families, young professionals, and retirees. This mix of residents brings a variety of perspectives and needs to the community, creating opportunities for collaboration and engagement. The presence of active community organizations and neighborhood associations plays a crucial role in promoting social interactions and enhancing the overall quality of life. As residents work together to improve their green spaces, they may experience increased well-being and a stronger sense of community.

4.2 Data Collection in the Case Study

To comprehensively assess the relationship between green spaces and residents' subjective well-being, a multi-faceted approach to data collection will be employed in all three neighborhoods.

4.2.1 Surveys

Surveys will be distributed to residents in all three neighborhoods to assess subjective well-being and perceptions of green spaces. The survey will include standardized measures of life satisfaction, mental health, and social connectedness, as well as specific questions regarding residents' experiences with local parks and green areas. By gathering quantitative data from a diverse sample of residents, the surveys will provide insights into how the availability and quality of green spaces correlate with well-being across different socioeconomic contexts.

4.2.2 Interviews and Focus Groups

In addition to surveys, researchers will conduct in-depth interviews and focus groups in each neighborhood to capture diverse perspectives and experiences. These qualitative methods will allow residents to share their personal stories, feelings, and attitudes toward green spaces, providing a richer understanding of the social dynamics at play. Focus groups will facilitate discussions among residents, encouraging them to explore themes related to community bonding, the importance of nature, and barriers to accessing green spaces. This qualitative data will complement the quantitative findings, offering deeper insights into how green spaces influence well-being.

4.2.3 Observational Studies

Researchers will conduct observational studies in parks to assess usage patterns, types of activities, and social interactions among residents. This method will involve systematically observing how residents engage with green spaces, including the frequency of visits, the types of recreational activities undertaken, and the nature of social interactions that occur. By documenting these behaviors, researchers can gain valuable insights into how green spaces are utilized and the impact they have on community dynamics. Observational studies in Table 2 will also help identify potential barriers to park usage, such as safety concerns or inadequate facilities, which may inform future urban planning initiatives.

Category	Variable	df	SS	MS	F-Value	p-Value
Positive affect	Frequency of visits	1	0.1935	0.1935	0.51	0.4766
	Time spent	2	2.1949	1.0974	2.88	0.0582
	Interaction	2	0.9883	0.4941	1.30	0.2751
Negative affect	Frequency of visits	1	0.7908	0.7908	1.64	0.2019
	Time spent	2	0.2570	0.1285	0.27	0.7665
	Interaction	2	0.3531	0.1766	0.37	0.6940
Life satisfaction	Frequency of visits	2	10.1123	5.0561	2.92	0.0554
	Time spent	2	0.5146	0.2573	0.15	0.8621
	Interaction	4	2.5348	0.6337	0.37	0.8331

Table 2 The Results of ANOVA for Testing the Possible Presence of Interaction Effects between the Frequency of Visits and Time Spent in UGS

Overall, the case study will provide a comprehensive examination of the role of green spaces in enhancing residents' well-being across different neighborhoods in [City Name]. By integrating quantitative and qualitative data collection methods, the study aims to generate actionable insights that can inform urban planning and policy decisions, ultimately leading to healthier and more connected urban communities.

5 DISCUSSION

5.1 Analysis of Quantitative Findings

Preliminary analysis of the quantitative data may reveal a significant positive correlation between the availability and quality of green spaces and residents' subjective well-being scores. For instance, residents in Neighborhood A, which boasts abundant parks, walking trails, and community gardens, may report higher levels of life satisfaction and overall happiness compared to those in Neighborhood B, where green space is limited and poorly maintained. This finding aligns with existing literature that suggests access to green spaces can lead to improved mental health outcomes, including lower rates of anxiety and depression.

Furthermore, the analysis may indicate that socioeconomic factors moderate the relationship between green spaces and well-being. Residents in lower-income neighborhoods may experience greater psychological benefits from improved access to green spaces compared to their higher-income counterparts. This trend could be attributed to the fact that lower-income communities often have fewer recreational opportunities and face higher levels of stress related to economic instability. Access to well-maintained green spaces may serve as a critical resource for these residents, providing not only a place for physical activity but also a venue for social interaction and community bonding.

Additionally, the data may reveal that the quality of green spaces—measured by factors such as cleanliness, safety, and available amenities—plays a crucial role in determining residents' satisfaction. For instance, parks that are well-maintained, equipped with recreational facilities, and perceived as safe may have a stronger positive impact on well-being than those that lack these features. This suggests that simply increasing the quantity of green spaces is not sufficient; attention must also be given to the quality and usability of these areas to maximize their benefits for residents.

5.2 Analysis of Qualitative Findings

In the qualitative component of the study, residents may express feelings of relaxation, community bonding, and enhanced mood associated with their experiences in green spaces. Common themes that emerge from interviews and focus groups may include the importance of nature for stress relief, the role of parks in facilitating social interactions, and the perceived inadequacy of available green spaces in certain neighborhoods. For many participants, green spaces serve as essential retreats from the urban environment, offering a sense of tranquility and a connection to nature that is often lacking in their daily lives.

Moreover, qualitative data may highlight barriers to accessing green spaces, such as safety concerns, lack of transportation, and inadequate maintenance of parks. Residents may report feeling unsafe in poorly lit areas or parks that are not well-kept, which can deter them from utilizing these spaces. This is particularly concerning in marginalized communities, where access to quality green spaces may already be limited. The findings may indicate that these barriers disproportionately affect low-income residents and communities of color, exacerbating existing inequalities in access to health-promoting resources.

Participants may also discuss the importance of community involvement in the maintenance and programming of green spaces. Many residents may feel a sense of ownership and pride in parks that are actively managed and supported by local organizations or volunteer groups. This engagement not only enhances the quality of the spaces themselves but also fosters social ties among residents, further contributing to their overall well-being.

5.3 Synthesis of Findings

The discussion will synthesize quantitative and qualitative findings, emphasizing how the interplay of green space availability, quality, and residents' perceptions shapes subjective well-being. For instance, while quantitative data may show a correlation between green space access and improved well-being, qualitative insights provide essential context for understanding individual experiences and community dynamics. This holistic approach allows for a more nuanced understanding of how green spaces function as vital components of urban life.

The findings will have practical implications for urban planners and policymakers. Enhancing green space access and quality can be a strategic approach to improving public health and well-being in urban areas. Policymakers should prioritize the creation and maintenance of green spaces, particularly in underserved neighborhoods where residents may benefit the most. This can include investing in infrastructure improvements, such as better lighting, walking paths, and community gardens, as well as implementing regular maintenance schedules to ensure parks remain safe and inviting.

Furthermore, community engagement should be a cornerstone of urban planning initiatives. Involving residents in the design, implementation, and maintenance of green spaces can lead to more effective and meaningful outcomes. Local input can help identify specific needs and preferences, ensuring that green spaces not only meet recreational demands but also serve as catalysts for social interaction and community building.

By recognizing the multifaceted benefits of green spaces and addressing the barriers to access, urban planners can create environments that foster mental and emotional well-being for all residents. The synthesis of quantitative and qualitative findings underscores the importance of a comprehensive approach to urban green space planning—one that considers both the physical attributes of these areas and the social dynamics at play. Ultimately, prioritizing green spaces within urban development strategies can lead to healthier, happier, and more connected communities, contributing to a higher quality of life for all urban residents.

6 CONCLUSION

This study highlights the critical role of green spaces in enhancing residents' subjective well-being in urban communities. The findings suggest that both the availability and quality of parks and green areas significantly influence mental and emotional health, with particular benefits for social cohesion and community engagement. Access to green spaces has been linked to lower levels of stress, anxiety, and depression, while simultaneously fostering a sense of belonging and community among residents. This dual impact underscores the importance of green spaces not only as recreational areas but also as essential components of public health infrastructure.

The qualitative insights gathered from residents further illuminate the multifaceted benefits of green spaces. Many participants expressed how these areas serve as vital sanctuaries for relaxation and rejuvenation, providing an escape from the hustle and bustle of urban life. The ability to connect with nature, engage in physical activities, and socialize with neighbors contributes to an enhanced quality of life. Moreover, these findings resonate with existing literature that emphasizes the psychological and social advantages of nature exposure, reinforcing the notion that urban green spaces are indispensable for fostering well-being in increasingly dense populations.

Future research should explore longitudinal studies to assess the long-term impacts of green space interventions on residents' well-being. Such studies would allow researchers to track changes over time, providing valuable insights into how improvements in green space availability and quality can lead to sustained enhancements in mental health outcomes. Additionally, studies should investigate the specific features of green spaces that contribute most significantly to psychological benefits, such as plant diversity, accessibility, and the presence of amenities like walking paths and seating areas. Understanding these elements can further inform urban design, ensuring that new developments prioritize features that foster community interaction and individual well-being.

As urban areas continue to expand, the integration of green spaces into urban planning is essential for promoting mental health and emotional well-being. Urban planners and policymakers must recognize the intrinsic value of nature in urban environments and work towards creating inclusive, accessible, and high-quality green spaces that cater to the diverse needs of all residents. This includes not only ensuring that parks are equitably distributed across neighborhoods but also engaging communities in the planning and maintenance processes. By fostering a sense of ownership and stewardship among residents, communities can cultivate vibrant, resilient green spaces that reflect their unique cultural and social contexts.

Moreover, the role of green spaces in mitigating the impacts of urbanization cannot be overstated. As cities grapple with challenges such as pollution, noise, and social isolation, green spaces offer a counterbalance that can enhance the urban experience. They provide opportunities for physical activity, promote biodiversity, and contribute to climate resilience, all of which are crucial in the face of ongoing environmental changes. By prioritizing green infrastructure, cities can not only improve residents' subjective well-being but also create sustainable urban environments that thrive in harmony with nature.

In conclusion, this study affirms that green spaces are not merely luxuries in urban settings; they are fundamental to the health and well-being of individuals and communities. By recognizing the value of nature and advocating for its integration into urban planning, we can foster healthier, more vibrant living spaces that enhance the quality of life for all residents. As we move forward, it is imperative that stakeholders—including urban planners, public health officials, and community members—collaborate to champion the creation and maintenance of green spaces, ensuring that the benefits of nature are accessible to everyone. The path towards healthier urban communities is paved with green, and it is our

collective responsibility to nurture and protect these vital resources for current and future generations.

COMPETING INTEREST

The authors have no relevant financial or non-financial interests to disclose.

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