

Research on the Synergistic Development of Sports Facility Planning and Urban Health Promotion

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Abstract: With the acceleration of urbanization and the growing prominence of public health issues, sports facilities are playing an increasingly important role in enhancing residents' health levels and promoting the development of healthy cities. Although progress has been made in the construction of sports facilities in many cities, challenges still remain, such as the lack of coordination between planning and urban development, insufficient facility quality and accessibility, and low public participation. This study analyzes the multiple impacts of sports facilities on public health, explores the intrinsic relationship between sports facilities and urban functions, and proposes specific strategies such as the establishment of a comprehensive sports facility planning system, optimizing facility distribution, and encouraging social participation in construction. These strategies aim to provide theoretical support and practical guidance for building healthy cities. The research shows that through scientific planning, optimized layout, and multi-party collaboration, the role of sports facilities in improving urban residents' health levels can be effectively promoted, thereby further advancing the comprehensive development of urban society.

Keywords: Sports facilities; Urban health; Planning system; Synergistic development; Sustainable development

Introduction

With the rapid pace of global urbanization, urban health issues are becoming increasingly severe. Modern cities have dense populations, sedentary lifestyles, and a continuous rise in the incidence of various chronic diseases, which pose major challenges to public health. However, the planning and layout of sports facilities still face many problems, such as lack of coordination with urban development, uneven distribution of facilities, limited functions, and low public participation, which hinder the full potential of sports facilities in health promotion. Based on this, the aim of this paper is to explore the synergistic development path between sports facility planning and urban health promotion, proposing feasible policies and practical solutions. By studying the impact of sports facilities on public health, analyzing the challenges faced in current planning, and exploring synergistic development paths, this paper hopes to provide theoretical support and practical guidance for governments at all levels and relevant planning departments, promoting the deep integration of sports facilities and urban health promotion.

1. The Role of Sports Facilities in Urban Health Promotion

1.1 The Impact of Sports Facilities on Public Health

As one of the key infrastructures driving urban health development, sports facilities have a profound impact on public health. First, sports facilities provide convenient spaces that encourage citizens to engage in various physical activities, thereby improving their physical health levels. Through regular exercise, residents can effectively reduce the incidence of chronic diseases such as obesity, hypertension, and diabetes, alleviating the pressure on healthcare resources. Research has shown that regular participation in sports activities can significantly reduce the risk of cardiovascular diseases, cancer, and metabolic syndrome, while also improving mental health by alleviating anxiety, depression, and other negative emotions. Moreover, the widespread availability of sports facilities helps enhance the overall health literacy of the population, raise residents' health awareness, and promote healthy lifestyles, thereby improving the overall health level of society^[1].

From the perspective of social health benefits, the construction of sports facilities not only improves

the physical fitness of residents but also promotes the improvement of community public health. For example, open community sports venues and fitness facilities encourage citizens of all age groups to participate in appropriate exercise, advancing the nationwide fitness movement. The World Health Organization (WHO) has proposed that promoting participation in physical activities for the entire population is an important pathway to improving public health, and the construction of sports facilities is one of the core conditions for achieving this goal.

1.2 The Relationship Between Sports Facilities and Urban Functions

The layout of sports facilities is closely related to urban functions, and the relationship between the two reflects the role of sports facilities in promoting urban development. First, sports facilities, as an important part of urban functions, not only serve the daily fitness needs of residents but also contribute to the diversification of urban functions and the sustainable development of regions. For instance, the construction of sports centers, sports parks, and other facilities can stimulate the development of surrounding businesses, services, and tourism, creating an agglomeration effect for the health industry and promoting diversified economic growth. In addition, the rational planning of sports facilities helps optimize the urban spatial layout, improve land-use efficiency, and enhance the quality of life and sense of well-being for urban residents.

Furthermore, sports facilities can effectively promote the improvement of urban social functions. In cities, sports facilities are not just places for physical exercise but also important platforms for community interaction, cultural exchange, and social integration. Through sports activities, citizens from different backgrounds, ages, and social classes can strengthen their connections and communication in shared activities, thus enhancing social cohesion and a sense of belonging. The construction of sports facilities contributes to promoting social harmony and cultural development in cities, becoming an essential component of the "soft power" of modern cities.

1.3 The Guidance of Sports Facilities on Social Behavior and Lifestyle

Sports facilities not only affect the physical health of citizens but also play an important role in guiding social behavior and lifestyles. First, sports facilities provide spaces for fitness, recreation, and entertainment, helping residents adopt an active lifestyle. In environments with high accessibility to sports facilities, citizens are more likely to develop a habit of regular exercise, especially among working professionals, students, and the elderly. Sports facilities can offer tailored activity spaces and programs to motivate these groups to engage in physical activity and maintain their health. Studies have shown that in convenient sports facility environments, the frequency and sustainability of residents' participation in physical activities increase significantly, directly promoting the spread of healthy behaviors and a shift in social trends^[2].

Moreover, sports facilities help guide social behavior norms, particularly in promoting the civilized use of public spaces. By providing clean and safe exercise environments, sports facilities not only influence residents' fitness behaviors but also propagate social values such as fairness, justice, cooperation, and competition through sports activities. For example, team sports (e.g., basketball, soccer) in sports facilities foster a sense of cooperation and team spirit, while individual sports facilities help enhance personal responsibility and self-discipline. The awareness of rules and the competitive spirit in sports activities subtly influence citizens' daily behavior, contributing to the improvement of urban social customs.

Finally, sports facilities encourage national fitness and healthy behaviors, actively guiding people to gradually abandon unhealthy habits such as sedentary lifestyles, staying up late, and poor dietary choices, and to adopt more positive health attitudes and behavioral patterns. For example, many cities have extensively built walking paths, bike lanes, and fitness equipment, encouraging citizens to walk and cycle, promoting low-carbon, environmentally-friendly modes of transportation, improving urban environmental quality, and further spreading the concept of sustainable development.

2. Challenges and Issues in Current Sports Facility Planning

2.1 The Incompatibility Between Sports Facility Planning and Urban Development

Currently, the issue of the incompatibility between sports facility planning and urban development has become a key factor restricting urban health promotion and the effective use of sports facilities. With

the acceleration of urbanization, urban functions have become increasingly diversified, and the planning of sports facilities often does not align with the overall urban development layout, leading to resource wastage and functional mismatch. Specifically, in some cities, the planning process has failed to precisely allocate resources based on the functional needs and development trends of different areas, resulting in a misalignment between sports facility construction and urban functions. For example, in some city center areas dominated by commercial, office, and high-density residential zones, the construction of sports facilities is often neglected or placed far from residential areas, making them inconvenient for citizens to use.

Moreover, the planning of sports facilities often lacks coordination with other urban functions such as green spaces, transportation networks, and environmental protection, preventing the formation of an effective urban public space network. This isolated and single-dimensional planning approach not only reduces the utilization rate of sports facilities but also affects the integration and overall benefits of urban functions. To effectively address this issue, it is necessary to strengthen the linkage between sports facility planning and the overall urban development plan, promote the integration of the "healthy city" concept, and ensure the organic connection between sports facilities and functions such as transportation, green spaces, and community services, thereby achieving multifunctional urban space utilization^[3].

2.2 Issues with Facility Quality and Accessibility

The quality and accessibility of facilities present another major challenge in current urban sports facility planning. Although many cities have built a large number of sports facilities, there remains a significant gap in their quality and accessibility. First, many old sports facilities, due to long periods of neglect and outdated equipment, fail to meet modern exercise demands, affecting citizens' user experience and exercise effectiveness. Additionally, while the number of newly built sports facilities has increased, there are still numerous issues in facility design, material usage, and functional layout. Some facilities have low design standards and fail to consider the needs of different populations, such as the elderly, children, and people with disabilities, leading to low utilization rates and even wasted resources.

On the other hand, the issue of accessibility is particularly prominent. While the construction of sports facilities in city centers or densely populated areas is relatively well-developed, many residents in suburban or older communities lack basic sports service facilities. Even in areas with more complete facilities, issues such as spatial layout and transportation connections make it difficult for residents to conveniently access sports venues and exercise spaces, especially during peak hours or under adverse weather conditions, which significantly reduces participation in sports activities. Furthermore, some facilities have unreasonable opening hours and operational management practices, failing to meet the public's need for round-the-clock and multi-level sports activities. Therefore, improving the quality and accessibility of sports facilities, especially enhancing their functionality, convenience, and accessibility design, is an urgent issue to be addressed in current sports facility planning.

2.3 Low Public Participation and Lack of Awareness

Low public participation and a lack of health awareness have become key issues affecting the planning and utilization of sports facilities. Although many cities have increased investment in sports facility construction and gradually improved facility conditions, public demand for and awareness of using sports facilities remain weak, particularly in smaller cities and rural areas. First, many residents, due to a long-term lack of exercise habits, view sports facilities as services only for a select group of enthusiasts, overlooking the importance of physical exercise in improving health levels. This perception limits the utilization rate of sports facilities and reduces public participation, making it difficult to fully utilize public sports resources.

Second, the low level of public participation in sports facility planning and construction has led to facilities being planned without fully considering the actual needs of residents. On one hand, citizens' opinions and needs regarding facility planning are often not effectively addressed, resulting in some facilities being out of touch with residents' real demands. On the other hand, due to insufficient policy guidance and information asymmetry, many citizens lack a comprehensive understanding and correct perception of sports facilities and fitness activities. In this context, improving public awareness of sports, encouraging citizens to actively participate in the planning, construction, and subsequent management of sports facilities, is essential to increasing the utilization of sports facilities and promoting the development of healthy cities^[4].

Therefore, increasing public awareness of sports participation, promoting the widespread adoption of

the concept of national fitness, and motivating residents to engage in sports activities, especially encouraging public involvement during the facility planning phase, has become an important way to address the existing problems in current sports facility planning. By strengthening sports education, organizing community events, and promoting healthy lifestyles, governments and relevant organizations can effectively increase public participation and awareness, thereby promoting the realization of urban health promotion goals.

3. Collaborative Development Path of Sports Facility Planning and Urban Health Promotion

3.1 Establishing a Comprehensive Sports Facility Planning System

To achieve the collaborative development of sports facility planning and urban health promotion, it is essential to establish a systematic and comprehensive sports facility planning system. This system should not only focus on hardware construction but also include aspects such as policy guidance, spatial layout, functional integration, and resource allocation. First, sports facility planning should be closely integrated with the city's overall development strategy, taking into account factors like urban population distribution, geographical environment, and transportation networks. A comprehensive layout should be carried out to ensure that facilities cover different areas, especially suburban and older communities, in order to meet the broad sports needs of citizens.

Second, the planning system should emphasize multi-level, multi-functional facility construction. In terms of infrastructure development, it is important to not only focus on large professional sports venues but also prioritize the construction of small, multifunctional facilities such as community sports centers, fitness trails, and park sports fields. These facilities should be organically integrated with the city's public spaces and green space systems to form a complete urban public sports service network. In addition, establishing a sound facility management system is an integral part of the planning system, ensuring the long-term sustainable use and maintenance of facilities. The government should establish relevant policies and regulations, clarify planning standards, and ensure the quality of facility planning and construction, thereby enhancing the execution of the plan^[5].

At the same time, the comprehensive planning system should include an analysis of the needs of different population groups, such as the elderly, children, and people with disabilities. This means that sports facility planning should focus more on inclusivity and fairness, avoiding imbalances in resource allocation due to improper planning, and ensuring social health equity.

3.2 Optimizing the Layout and Functional Integration of Sports Facilities

Optimizing the layout and functional integration of sports facilities is a key path to improving the efficiency of urban sports facility utilization and promoting health. Currently, many cities still face the problem of excessive concentration of sports facilities, especially in city center areas, while surrounding and suburban areas have relatively weak facility development. This imbalanced layout not only affects citizens' participation in sports but also causes the waste of public resources. Therefore, optimizing the layout of sports facilities, especially by addressing the lack of facilities in suburban and low-income communities, is crucial to solving this problem.

The core of optimizing the layout is to reasonably arrange the distribution of sports facilities based on factors such as population density, transportation convenience, and regional characteristics, making them more accessible to residents' living and working areas. For example, community fitness centers or multi-functional sports fields can be built in densely populated residential areas, around schools, and in commercial districts to improve accessibility and coverage. In addition, cities should integrate sports facility planning with public transportation systems to enhance accessibility by setting up dedicated bus routes, walkways, and bike lanes, ensuring that citizens can easily and quickly reach sports venues, thereby minimizing transportation costs^[6].

In terms of functional integration, sports facilities in modern cities should not only provide traditional exercise functions but also combine other urban functions, such as leisure, culture, and ecology, to create multi-functional, compound sports spaces. For example, sports parks can be integrated with urban green spaces, walkways, and bike lanes, offering multiple sports options such as fitness, running, and cycling to meet the diverse needs of different groups. Furthermore, sports facilities should consider the application of intelligent and informational technologies, promoting the modernization and intelligent management of facilities. For instance, the construction of smart sports venues, through intelligent

management systems, can enhance facility utilization efficiency, reduce energy consumption, and improve user experience.

3.3 Encouraging Social Participation in Sports Facility Construction

The participation of social forces is an important way to promote sports facility construction and improve urban health levels. It can effectively achieve diversified resource allocation, ease the financial burden on the government, and enhance the social adaptability and sustainability of sports facility construction. The government can attract social capital into the construction and operation of sports facilities through policy incentives, tax benefits, land use rights, and other measures. For example, the application of the "Public-Private Partnership" (PPP) model can optimize capital allocation, reduce the burden on public finances, and improve project operation management and market efficiency. Through this approach, social capital can not only take on part of the construction and operational responsibilities but also contribute more innovative ideas and practical experiences in the long-term management of facilities.

Corporate participation can provide funding, technology, and operational experience for sports facility construction, driving the specialized development of facilities. For example, sports equipment manufacturers can participate in the supply and customization of fitness equipment, launching sports facilities that meet consumers' personalized needs in response to market demand. Additionally, businesses can fully play a regulatory role in the construction process, integrating sports facility construction and operation into market mechanisms, thereby improving market-oriented operational efficiency and user experience. This, in turn, can promote the development and innovation of the city's sports industry. It is also worth noting that cooperation between enterprises and governments can jointly promote the ecological construction of the sports industry, creating a mutually beneficial "sports industry + health promotion" model.

At the same time, the participation of social organizations and community residents is also crucial. By establishing community sports foundations, volunteer organizations, and other social forces, residents can be mobilized to participate in facility planning, construction, and management. High recognition and a sense of ownership of sports facilities among residents not only increase facility utilization rates but also strengthen community cohesion, promoting the shared use of sports resources. Non-governmental organizations (NGOs) and charitable institutions can also provide targeted services to vulnerable groups, particularly low-income populations, the elderly, and people with disabilities, promoting inclusive sports facility construction. This type of social participation not only improves the accessibility of sports facilities but also strengthens societal recognition and support for health promotion concepts, further advancing the overall improvement of urban health levels.

Conclusion

This study reveals the multiple roles of sports facilities in urban health promotion through in-depth analysis of the impact of sports facilities on public health and their relationship with urban functions. However, the planning of sports facilities currently faces numerous challenges, such as the incompatibility with urban development, insufficient facility quality, and low public participation. To address these issues, this paper proposes strategies such as establishing a comprehensive sports facility planning system, optimizing facility layout and functional integration, and encouraging social participation in sports facility construction to promote the collaborative development of sports facilities and urban health promotion. Future research could focus on the application of intelligent technologies in sports facilities, exploring the innovative use of big data and artificial intelligence in facility management and health monitoring.

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References

- [1] Li, C. C. (2023). *Research on the Optimization Strategy of Urban Community Sports Facilities under the Vision of Healthy China*. *Sports Vision*, (23), 17-19.
- [2] Tang, W. H. (2022). *Research on the Planning and Design Strategy of Urban Community Sports Facilities under the Vision of Healthy China (Master's thesis)*. Hebei University of Architecture and Engineering.
- [3] Zhu, M. L. (2020). *Research on the Evaluation of Urban Community Sports Facilities from the Perspective of Health Equity (Master's thesis)*. Harbin Institute of Technology.
- [4] Zhao, W. (2024). *Study on the Relationship Between Sports Facility Construction and Healthy Living in Communities*. *Sports Goods and Technology*, (20), 16-18.
- [5] Xiao, Y. Q. (2024). *Current Situation of Public Sports Service Facility Construction and Optimization Strategies in Hunan Province*. *Proceedings of the 4th International Sports Science Conference, International Bandy Federation (FIB), International Sports Coalition Association (ISCA), and China Bandy Association (CBA)*.
- [6] Zeng, W. D. (2023). *Strengthening the Construction of Sports Facilities to Meet the Public's Fitness Needs*. *Yulin Daily*, 2023-11-01 (A01).