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Research on Embodied Obstacles in Mountain City Parks from a Healing Perspective

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Abstract: With the acceleration of urbanization, mountain city parks have become an important space for residents to relax, unwind, and have intimate contact with nature. However, these parks often face embodied obstacles in their design and use, where the body is restricted when interacting with the environment due to the unique terrain features of mountainous cities. This obstacle may weaken the healing function of the park and have an impact on the recovery of users' physical and mental health. Based on a healing perspective, this article aims to explore the issue of embodied obstacles in mountain city parks, analyze their impact on individual psychological and physiological health, and propose strategies for optimizing park design to enhance the healing effect and inclusiveness of parks, and provide better natural interactive experiences for urban residents.

1. Introduction

As an important component of the urban ecosystem, urban parks have multiple functions such as improving environmental quality, providing leisure space, and promoting social interaction. Especially in mountainous cities, due to their unique geographical environment, the design and use of parks face unique challenges and opportunities. In recent years, the healing perspective has gradually gained attention, emphasizing the impact of the environment on individual physical and mental health. However, mountain city parks have certain embodied obstacles in meeting healing needs. This article aims to explore the specific manifestations and influencing factors of these obstacles, in order to provide reference for the optimization design of mountain city parks.

2. Development status of mountain parks

Mountain urban parks refer to public recreational spaces located in cities with mountainous terrain, combining natural landscapes with urban amenities to provide residents with a green, healthy, and vibrant living environment[1]. From a healing perspective, mountain urban parks are seen as vital spaces for promoting the physical and mental well-being of residents. Due to their unique geographical environment and ecological characteristics, these parks play an essential role in urban ecosystems. They not only offer places for leisure and recreation but also promote residents' health and community interaction. Previous studies have explored mountain parks from a healing

perspective. For example, Chen et al. developed the Urban Mountain Park Quality Perception Scale (UMPQPS) and used semi-structured interviews and content analysis to evaluate park quality perception. They applied path analysis to study the direct and indirect effects of personality traits, health status, and mood on the quality and recreational satisfaction scores of urban mountain parks[2]. Xia Mingming, through an investigation of major urban parks in Chongqing, identified the scale and form of urban parks that maximize public participation in specific mountainous environments and proposed the "calories per square meter" as a unit of measurement for space energy consumption efficiency[3]. Chen Wenci, using data scraping tools, obtained photos from visitors at Feifengshan Olympic Park in Fuzhou, classified landscape elements, and statistically analyzed their frequency. He examined the relationship between landscape preferences and proactive health behaviors, concluding that mountain parks should improve their landscape-water relations, fitness trail systems, and service facilities[4].Due to the complex terrain and climate conditions typically faced by mountain cities, park design must consider accessibility, environmental quality, and integration with community culture[5]. However, mountain urban parks also face embodied barriers, such as poor physical accessibility, lack of clear signage, and insufficient social spaces, which may negatively impact residents' experiences and psychological comfort[6-7]. In conclusion, while mountain parks hold great potential for providing healing environments, the embodied barriers in their current state limit the full realization of their functions. Future park design and planning should focus on removing these obstacles to achieve broader social interaction and mental and physical health improvements, ultimately enhancing the overall healing effect of the parks.

3. Healing Perspectives on Embodied Obstacles in Mountain City Parks

3.1 Geographical characteristics and embodied obstacles of mountainous cities

The unique terrain features of mountainous cities pose the biggest challenge for park design and construction. The mountainous terrain causes the park to have variable terrain and steep slopes, which in turn limits the access paths within the park, especially for special groups such as the elderly, disabled, and families with infants[8]. The accessibility of these parks is severely restricted. This issue directly affects the user base and healing function of the park. From a healing perspective, the natural environment promotes psychological and physiological recovery by stimulating human multisensory experiences such as vision, hearing, smell, and touch, as well as physical movements such as walking, running, yoga, etc. However, the embodied obstacles in mountain city parks weaken the effectiveness of these healing experiences. The steep slopes, narrow trails, and uneven ground often pose physical inconvenience and even danger to people when using these parks. This embodied obstacles not only reduces people's willingness to use the park, but also hinders their full interaction with the environment through exercise, affecting the therapeutic effect of the park. Meanwhile, due to the complex terrain, the spatial layout of mountain city parks is often scattered, resulting in uneven distribution of public facilities such as restrooms, rest areas, drinking water points, etc. The scarcity of these facilities further exacerbates the inconvenience for users in the park, especially for those who require more care. This environment lacking infrastructure support makes it difficult to provide a comfortable user experience, thereby limiting their range of activities in the park and reducing their participation and the possibility of physical and mental recovery.

3.2 Social interaction and embodied obstacles

In healing landscapes, social interaction is one of the key factors in enhancing individual physical and mental health[9]. Mountain city parks not only provide natural environments, but also

offer residents a social platform to promote interaction and communication among themselves. However, embodied obstacles also have a negative impact on social interaction. Firstly, parks in mountainous cities often lack open spaces suitable for social interaction due to their terrain limitations. For example, the limited flat areas in the park make it difficult for residents to engage in large-scale collective activities such as community yoga and team sports. This limitation suppresses people's social desires, causing the park to lose its function of promoting residents to connect with each other. Secondly, improper or incomplete design of the park's traffic paths may result in different groups being separated and lacking intersection within the park. This spatial separation not only weakens social interaction, but may also exacerbate social isolation and loneliness, especially among the elderly population. Embodied obstacles also affect the way parks are used by different cultural backgrounds or communities. From a healing perspective, there are differences in the perception and usage of natural environments among people from different cultural backgrounds. For example, some cultures tend to prefer collective activities, while others prefer solitude or quiet environments. Due to the limitations of its terrain and facilities, mountain city parks may not be able to meet these diverse needs simultaneously, which exacerbates social inequality and weakens the healing effect of the park.

3.3 Ecological sustainability and embodied barriers

The ecosystem of mountain city parks is closely related to their healing functions. Healing landscapes not only require the beauty and comfort of the natural environment, but also emphasize the health and sustainability of the ecology[10]. However, embodied obstacles may lead to ecological imbalance within the park, which in turn can affect its long-term healing function. Firstly, the natural resources in mountainous cities are often fragile, especially in the process of park construction. Without effective measures to protect the ecological environment, it may lead to problems such as vegetation damage and soil erosion. This ecological imbalance not only reduces the aesthetic value of the park, but may also affect its positive impact on human psychology. Research has shown that the quality of the natural environment is closely related to people's mental health, and a good ecological environment can help alleviate stress and enhance happiness. Ecological degradation, on the other hand, may have the opposite effect, resulting in people being unable to obtain effective healing experiences in parks. In addition, Embodied Obstacles may also lead to uneven distribution of visitors in the park, concentrated in some relatively flat or well-equipped areas, causing excessive use and damage to the local environment. For example, some popular areas in the park may suffer from soil compaction, plant damage, and other issues due to overuse, further weakening their ecological functions and healing effects. Therefore, in the planning and design of mountain city parks, how to balance ecological protection and human use needs, and avoid excessive impact of Embodied Obstacles on the ecosystem, has become a key issue that urgently needs to be addressed.

3.4 Policy planning and specific obstacles

The issue of embodied obstacles is not only a matter of design and management, but also involves broader policy and planning issues. The construction and management of mountain city parks are often constrained by local governments and relevant institutions, and the lack of effective policy support and funding investment is one of the fundamental reasons for the specific obstacles[11]. From a healing perspective, park planning should not only meet residents' entertainment and leisure needs, but also consider its function as a public health promotion venue. However, many local governments often overlook this point in park planning, resulting in the healing function not being fully utilized. For example, in the policy-making process, the lack of

consideration for the needs of vulnerable groups has led to many difficulties for these groups in the use of parks. The lack of accessible facilities, unreasonable trail design, and inadequate infrastructure all stem from the failure to fully consider the impact of embodied obstacles in policy planning. In addition, the lack of long-term financial support and maintenance mechanisms in park management has led to aging park facilities and environmental degradation, further exacerbating the problem of embodied obstacles.

4. Healing Perspectives: Strategies for Addressing Embodied Obstacles in Mountain City Parks

From a healing perspective, the solution strategy for embodied obstacles in mountainous urban parks needs to comprehensively consider various factors such as terrain, spatial design, activity planning, and social policies. The embodied cognition theory emphasizes the interaction between the body and the environment, while embodied obstacles refer to the limitations of this interaction, which may be caused by improper environmental design, complex terrain, inadequate facilities, and other issues that restrict individuals' physical movements. Therefore, developing systematic and comprehensive solutions can help enhance the healing function of mountain city parks, assist different populations in better interacting with nature, and improve their physical and mental health. The following will explore in detail how to address the challenges of embodied obstacles from three aspects: design optimization, inclusive activity arrangements, and community and policy cooperation.

4.1 Improving park design and facilities

From a healing perspective, the physical design of the park must adapt to the unique terrain of mountainous cities while considering the usage needs of different populations. Mountain city parks often pose challenges to individuals with limited mobility due to their undulating terrain and complex paths. Therefore, improving the accessibility and inclusiveness of park facilities is the primary strategy for addressing embodied obstacles. The road design of mountain parks should minimize areas with steep slopes, add pedestrian pathways with gentle slopes, and provide accessible paths for people with limited mobility. Optimizing the stairs or rugged sections of the park by adding basic facilities such as wheelchair access, handrails, and benches can effectively improve the user experience for different groups of people. In addition, the internal roads of the park should be regularly maintained to avoid problems such as uneven ground and water accumulation on the road surface that may affect traffic. The layout of the rest area and observation deck in the park should also consider the characteristics of mountainous terrain, providing visitors with more accessible perspectives and convenient resting places. For example, increasing accessible pathways to major attractions and viewing areas, and setting up sunshades, benches, and other facilities at important nodes to facilitate people stopping and resting while walking. At the same time, the design of the observation deck and rest area should take into account the needs of special groups such as wheelchair users, ensuring that they can conveniently enjoy the natural landscape of the park. By introducing intelligent guidance systems and information technology facilities, we aim to assist tourists, especially those with disabilities, in better planning their routes and accessing related services. For example, developing smartphone applications that provide detailed park maps, recommended accessible paths, and tips for rest spots, allowing tourists to freely choose their own suitable travel routes. At the same time, clear signs and signage should be added inside the park to provide more convenient path choices for people with limited mobility.

4.2 Enhancing interactive emotions in the park

From a healing perspective, enhancing the interaction and emotional connection in mountain parks is crucial. Firstly, by designing areas that integrate sensory experiences, such as setting up flowing water, bird songs, aromatic plants, etc., visitors can be inspired to resonate emotionally with nature. By utilizing cultural symbols and historical backgrounds, create symbolic landscape elements to help tourists establish deeper visual and emotional connections. This design not only helps improve mental health, but also increases tourists' emotional identification with the natural environment. Secondly, providing diverse social interaction spaces is the key to enhancing the interactive experience. By setting up open lawns, squares, and other areas suitable for collective activities, residents are encouraged to participate in social activities. Finally, organizing experiential nature and health healing activities such as tree planting, nature lectures, meditation, and volunteer cleaning activities can enhance emotional connections between people and nature, as well as between people, through the interaction between the body and the environment. This activity not only promotes social interaction, but also enhances participants' awareness of environmental care, further strengthening the healing function of the park.

4.3 Promoting inclusive and diversified activity experiences

One of the core elements of healing landscapes is to promote interaction between people and nature through rich activity content, thereby bringing about physical and psychological healing effects. In order to address the issue of embodied obstacles, mountain city parks should be more inclusive and diversified in their activity planning, so that everyone can participate and benefit from it. Parks should provide dedicated activity spaces for people of different age groups and physical conditions to ensure that they can participate in outdoor activities. For example, designing areas with lower activity intensity for children and the elderly, such as low slope trails, quiet bird watching areas, etc; Set up accessible sports facilities for individuals with limited mobility, such as paths and venues suitable for wheelchairs. Through these measures, the park can encourage more people to integrate into nature and enjoy the healing effects it brings. Diversified activity arrangements can not only enhance the attractiveness of the park, but also help visitors reduce stress and restore physical and mental health through participatory healing experiences. The park can regularly hold various activities suitable for different groups of people, such as outdoor yoga, painting, nature lectures, handicrafts, etc. At the same time, for people with embodied obstacles, parks can introduce more targeted activities, such as marathons and rehabilitation exercises on dedicated paths for wheelchair users, to further enhance their interaction with nature. The essence of a healing experience is to achieve physical and mental relaxation through perceiving the diversity of nature and interacting with the environment. Therefore, parks can provide more natural experience projects, such as forest bathing, meditation, nature photography, etc. These activities do not require excessive physical participation, but rather allow people to find peace and healing in nature through sensory involvement. This form of activity is particularly suitable for groups with limited mobility or psychological disorders, helping them improve their physical and mental state through natural therapy.

4.4 Strengthening policy guidance and community collaboration

Solving the problem of embodied obstacles not only relies on optimizing design and activities, but also requires policy support and active community participation. Policy makers should promote the sustainable development of parks through reasonable planning and guidance, and ensure the maximization of healing functions. Meanwhile, the participation and feedback of community

residents have also played an important role in the process of park construction and improvement. Policy makers need to incorporate the resolution of embodied obstacles into the core agenda of urban planning and park management from a healing perspective. The government should develop policies that encourage accessible design and clearly stipulate that the needs of people with limited mobility must be considered when constructing or renovating park facilities. In addition, the government should provide resources and support for community groups, encourage their participation in the planning and management of parks, and jointly promote the inclusive construction of parks. The feedback and participation of community residents are important basis for improving park facilities and activity arrangements. Policy makers should actively listen to the opinions of community residents, especially those with disabilities, and use citizen participation mechanisms to encourage residents to provide suggestions for improving park facilities. For example, regularly holding community hearings, online opinion solicitation, and other activities allow park users to directly participate in park management and design, thereby better meeting the needs of diverse populations. At the policy level, it is necessary to strengthen the promotion and publicity of the functions of healing parks, and enhance the public's understanding of the specific healing functions of parks. By collaborating with medical institutions, education departments, and other organizations, the government can promote the unique role of parks in promoting health and healing. For example, organizing medical teams to regularly hold health lectures, exercise rehabilitation activities, etc. in the park to help people better understand how to use the park for healing. Meanwhile, the education department can cultivate students' sense of environmental identity and healthy lifestyle habits by organizing outdoor activities.

5. Conclusion

The problem of embodied obstacles in mountainous urban parks from a healing perspective not only affects the park's user experience, but also restricts its healing function. By optimizing design, enriching activities, and strengthening policy and community collaboration, these barriers can be effectively eliminated, enhancing people's healing experience in the park. In the future, the construction and management of mountain city parks should pay more attention to inclusivity, ensuring that everyone can participate in natural interactions without barriers, and achieve physical and mental recovery and health improvement.

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