

Place-Making in Healthy Communities Using the Theory of Scenes

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ABSTRACT: Currently, both in practice and theoretical studies, the construction of healthy communities predominantly focuses on enhancing physical spaces. However, there is limited guidance on promoting healthy lifestyle behaviors and only superficial discussions regarding operation and maintenance systems. The theory of scenes holds profound significance in urban research and spatial quality improvement, addressing not only the physical environment but also forms of social organization. The healthy community is the basic unit in social space for the construction of the health scene. Therefore, applying the new perspective of scene theory respects the established standards and guidelines while exploring the creation of healthy communities to guide people's healthy lifestyles and direct design practice. The research analyses the domestic healthy community research, summarizing the connotations and the development history of healthy communities both domestically and internationally, and compares the content of concern, research units, and the connotation composition of healthy communities internationally. Based on scene theory, it analyses the relationship between the physical environment of a healthy community and the behavioural styles of people in a healthy community. With the help of scene theory, it proposes five elements of healthy communities (residents and collaborators, physical space, health service facilities, health activities, and community values) and nine sub-scenes (healthy environment, healthy living, healthy transportation, health services, healthy facilities, healthy hygiene, healthy activities, healthy society, and healthy policies). At the same time, it conducts a comparative analysis of the typical standards of domestic and foreign healthy communities, and incorporates the differences in the creation of healthy communities at home and abroad to improve the content and operation systems of healthy communities.

KEY WORDS: healthy community; healthy community standard; the theory of scenes; place-making; community planning; public healthy

Introduction

Over the past half-century, healthy communities have emerged as a hot topic in both theoretical research and design practice globally. In 1986, the World Health Organization (WHO) launched the Health Promotion Program, outlining an agenda for action that includes enhancing public participation and reinforcing community actions to further promote community health[1]. For instance, the

UK's National Planning Policy Framework identifies the critical role of planning in health and well-being, explicitly stating in Chapter 8 the need to "promote healthy and safe communities." In 2016, China's "Healthy China 2030" blueprint emphasized the widespread development of healthy communities. By 2019, the construction of healthy communities became a key component of the "universal participation, co-construction, and shared bene-

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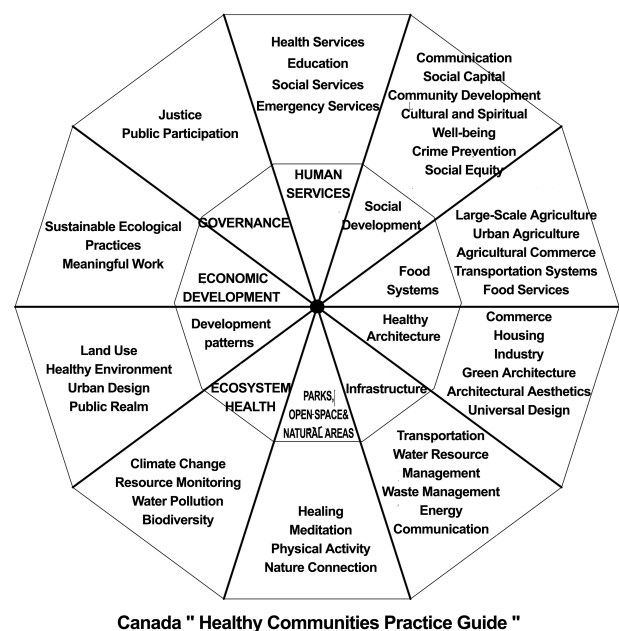
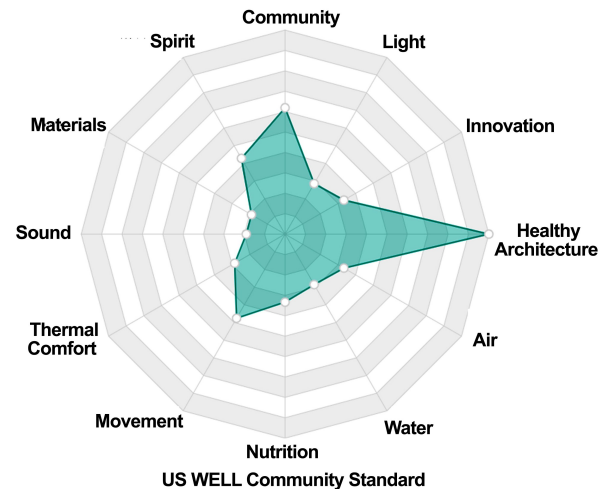
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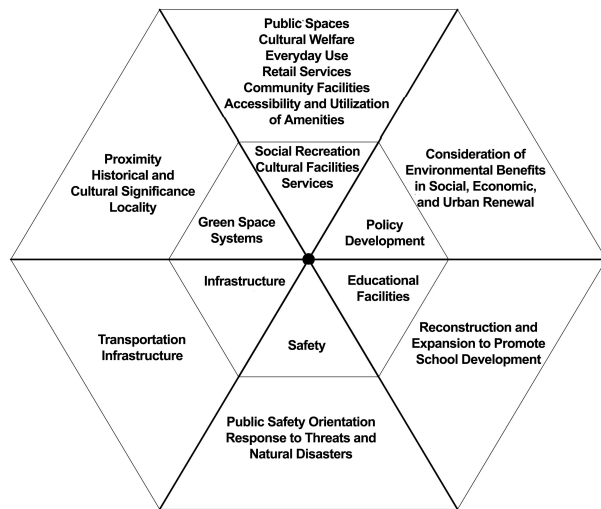
fits” principle fundamental to the Healthy China initiative.

The concept of healthy communities is continually evolving. Primarily, healthy communities emphasize the organic integration of people, the physical environment, and the social environment, promoting residents’ health through improvements in both physical and social contexts. For instance, Japan considers the safety of natural, social, and transportation environments as fundamental to healthy communities, where residents’ physical activities are inherently linked to these factors[2]. Take Fujisawa community in Japan as a case study, which integrates smart infrastructure to advance community development across five key areas: energy, safety, transportation, health, and overall community wellbeing, fostering a health-conscious environment for all age groups. This includes a “local integrated care system” that offers a chain of medical, nursing, elder care, and pharmaceutical services, while community centers organize various health promotion activities[3]. Furthermore, beyond supporting and promoting healthy lifestyles, healthy communities provide vibrant public spaces that facilitate social interaction and neighborhood engagement, ultimately reducing crime[4]; For example, the WELL Community Standard in the United States envisions communities characterized by inclusivity, integration, resilience, strong social identity, and high levels of social interaction participation[5].

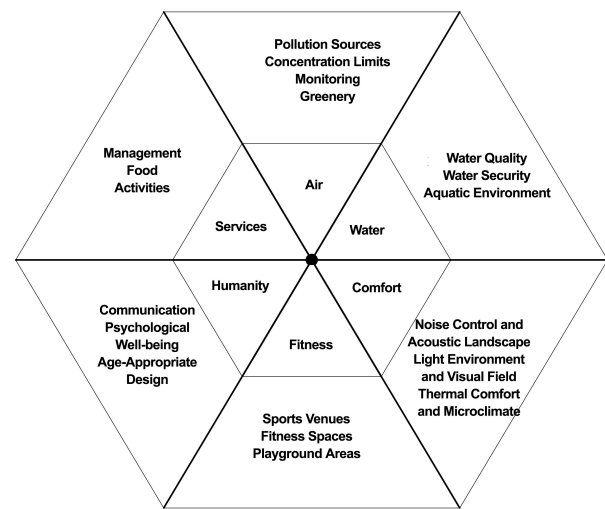
Internationally, healthy communities emphasize different aspects such as safety, intelligence, community engagement, policy mechanisms, collaborative interactions, and elder care and medical services (Figure 1 and Table 1). The Centers for Disease Control and Prevention in the United States highlight that the creation and maintenance of healthy communities rely on the collective efforts of government, residents, social organizations, and community enterprises. This collaboration helps residents form organized groups to work together for disease prevention and health maintenance[6]. In the UK, the focus is on harnessing endogenous community strengths to build healthy communities. Key measures include strengthening community organizations, building volunteer teams, enhancing

cooperation and communication, and ensuring the accessibility and efficient use of community service facilities[7]. Canada’s approach to healthy communities emphasizes softer aspects such as developmental models, ecological considerations, cultural and social factors, and policy mechanisms. Planners engage with multidisciplinary organizations to lead the implementation of healthy community projects[8]. For instance, in Airdrie, Canada, the goal is to establish the nation’s healthiest community by organizing and coordinating residents and various resources. A series of initiatives have been undertaken, including enhancing economic vitality, reducing healthcare costs, creating age-friendly social networks, and developing smart community platforms[9].

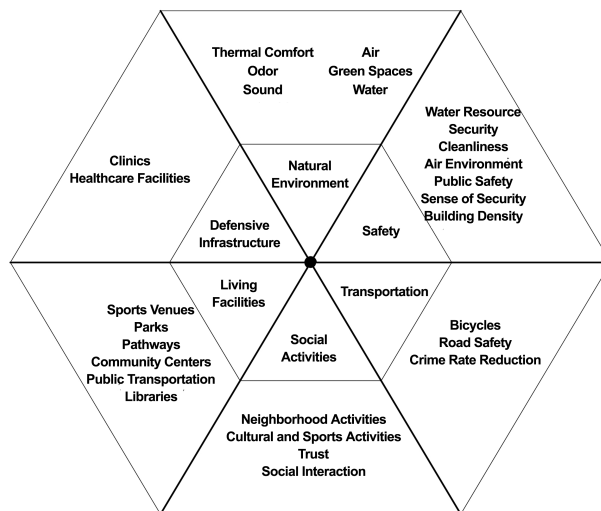




UK "Promoting healthy and safe communities"



China "Standards for Healthy Community Assessment"



Japan "Overview of Healthy Community Assessments"



Taiwan of China "Six-Star Healthy Community Promotion Plan"

Figure 1 Comparative Analysis of the Content of Healthy Communities Domestically and Internationally

Table 1 Overview of healthy community standards in domestic and international contexts

	United States	Canada	Japan	United Kingdom	China	Taiwan of China
Name	WELL Health-Safety Rating	Guidelines for Healthy Community Practices	Overview of Healthy Community Assessments	Promoting Healthy and Safe Communities	Standards for Healthy Community Assessment	Six-Star Healthy Community Promotion Plan
Year	2020	2018	2013	2019	2020	2006
Research unit	IWBI (International WELL Building Institute)	CIP (Canadian Institute of Planners)	CSABEE (Council for the Sustainable Aging and Better Environment)	MHCLG (Ministry of Housing, Communities and Local Government)	China Urban Planning Society et al.	Executive Yuan
Highlights	Built Environment, Nutrition, and Fitness	Policy Mechanisms, Multi-party Collaboration	Safety Intelligence, Elderly Care and Healthcare	Engagement and Cooperation, Service Facilities	Built Environment, Humanity, and Fitness	Community Development, Multidimensional Consultation

The development of healthy communities in China primarily focuses on four key areas: the establishment of planning standards, enhancement of the physical environment, social governance, and theoretical research. For in-

stance, in terms of planning integration, Shanghai's "15-Minute Community Life Circle Planning Guidelines" provide guidance on improving built environment quality, addressing indoor environments, city slow traffic systems,

public interaction spaces, and fitness areas. Additionally, these guidelines set standards for health service facilities such as health service centers and rehabilitation centers [10]. The “Healthy Community Evaluation Standards” developed by organizations like the Chinese Society for Urban Studies emphasize that, beyond basic functions, healthy communities must offer a healthy environment, facilities, and services, thereby enhancing health performance [11]. Chinese Taiwan’s “Six-Star Healthy Community Promotion Plan” covers six aspects: Industrial development, social welfare and healthcare, community safety, humanity education, environmental landscape, and ecological conservation [12], promoting a self-directed community-building model. In terms of enhancing the physical environment, cities such as Suzhou, Shanghai, and Hangzhou have made progress in constructing healthy communities as a vital component of healthy urban development [13]. Regarding social governance, Chengdu focuses on resident needs, utilizing resources from healthcare, the health industry, and the internet plus to innovate community governance models. In the renovation of old urban communities in Chengdu, models for livable environments, cultural activities, business offices, and tourism consumption have been developed [14]. In Taipei, a community has engaged in long-term empowerment efforts, involving professionals in health assessments to gauge resident preferences. This community has integrated local resources to establish organizations focused on chronic disease management and reading classes for mothers, playing a significant role during the SARS outbreak [15]. Diverse grassroots negotiations and the establishment of grassroots-community networks have fostered bottom-up self-driven construction initiatives. Theoretical research on healthy communities encompasses content refinement, governance systems, and strategy formulation. The concept has been increasingly delineated across macro categories of physical, economic, and social environments [16], as well as six dimensions: housing, environment, facilities, transportation, society, and activities [17]. Evaluations of health performance have focused on sustainability, balance, and quality, encompassing six target areas: vitality, carrying capacity, development capacity, coordination, resilience, and cyclical capac-

ity [18]. Community governance plays a crucial role in healthy communities. Researchers like Yuan Yuan propose collaborative governance mechanisms among diverse parties in response to public health crises [19]. Zhang Tianyao suggests institutional frameworks for healthy community construction from three perspectives: institutional guarantees, collaborative networks, and support systems [20]. Furthermore, strategies for building healthy communities have expanded beyond physical space to focus on specific groups, such as children, women, and the elderly. Under the theme of “age-friendly healthy communities,” Yuan Yuan and colleagues discuss strategies for fostering these inclusive environments [21-23].

Current research on healthy community theories and standards in China has achieved notable progress, primarily focusing on enhancing the physical environment. However, there is limited guidance on promoting healthy lifestyles and insufficient exploration of operational maintenance systems, resulting in unclear construction directions. Additionally, further development is needed in areas such as public health, medical resources, and health services. In scene theory, studies indicate that health-related comforts within communities remained largely unaffected during the Great Depression, underscoring the enduring importance of health as a community need. Community scenes have long been a focal point of scene theory research. On one hand, they reflect the collective needs of residents, indicating new directions for community vitality; on the other, applying scene theory to community development can shape the specific values and lifestyles of community members, thus promoting overall community growth. Therefore, it is both necessary and feasible to apply scene theory to the construction of healthy communities. How to refine the content and operational systems of healthy communities based on this foundation, in order to meet current demands for health and well-being, requires further exploration in both theoretical and empirical research. This paper advocates for a new perspective through the lens of scene theory, respecting existing standards and guidelines while investigating the construction of healthy communities. The goal is to guide healthy lifestyles and inform design practices. By analyzing the relationship between the

environment of healthy communities and the behaviors of participants, this study identifies the essential components and scenes of healthy communities. Additionally, it conducts a comparative analysis of typical standards for healthy communities both domestically and internationally, thereby offering differential enhancements to the construction content and operational systems of healthy communities.

1 Scene theory and its implications

1.1 Scene theory

In the post-pandemic era, health and well-being have emerged as essential aspirations for the public in pursuit of a better quality of life. Beyond existing research on aesthetics, vitality, and culture, health and well-being represent a new trend in scene studies. As previously mentioned, the current development of healthy communities requires enhancement in operational systems and construction directions, which is closely linked to the social organizational forms underlying the physical space. Scene theory offers a fresh perspective for the construction of healthy communities. Terry Nichols Clark and Daniel Aaron Silver have proposed the Theory of Scenes, which analyzes the natural and social attributes of urban space, integrating cultural and aesthetic dimensions within a sociological framework[24,25]. This approach facilitates healthy communities to focus not only on physical spaces and material production, but also on the underlying social organizational forms, which is particularly essential in the current development of healthy communities.

Scenes are defined as social spatial units where people congregate, encompassing cultural and aesthetic characteristics specific to particular areas. They reflect the lifestyle and consumption behaviors of residents, encapsulating the emotional atmosphere of a place. In the theory of scenes, Clark emphasizes that the most suitable unit for analyzing scenes is the community, rather than broader categories such as nations, provinces, ethnicities, or cities and metropolis, because communities can effectively avoid overly macro perspectives while simultaneously reflecting significant distinctions[26]. Thus, healthy communities can be viewed as the “cellular engineering” of healthy cities, serving as the fundamental social spatial units for the

creation of healthy scenes, underscoring the rationale for applying scene theory to healthy communities. Consequently, by utilizing the tools and perspectives of scene theory, it is essential to incorporate this framework into the development of healthy communities, emphasizing the significant roles of social organizational forms, cultural activities, and service facilities in guiding the health behaviors of community residents.

1.2 The inspiring role of scene theory in the development of healthy communities

1.2.1 Guiding residents toward healthy lifestyles

Guiding residents toward healthy lifestyles is the primary objective and core of constructing health scenes within communities. Public behavior, as a crucial component of scenes, is influenced by the surrounding environment. Specific health scenes foster a sense of belonging and identity among individuals, providing direction for those with health needs. A human-centered approach in healthy communities addresses the diverse and individualized health demands of residents, encouraging them to make healthy choices throughout their daily routines and thereby promoting positive health behaviors. This demand-driven focus emphasizes the enhancement of the physical environment, the implementation of specialized community infrastructure, and the realization of intelligent community management.

1.2.2 Matching amenities with community health needs

As the demand for healthy living continues to rise, the spatial applications in China remain relatively limited, and corresponding facilities and services require innovation. Previous efforts in healthy community construction have largely concentrated on improving building systems related to air and water quality[27], while attention to the quality and environmental sustainability of the indoor built environment has also been significant[28]. However, aspects such as public services, scene design, and specialized facilities have not adequately addressed residents' needs. For example, many community public spaces lack professionally designed health activity facilities, and the design of community streets and green spaces often overlooks health-oriented landscape considerations. Addition-

ally, the placement of facilities does not sufficiently promote healthy lifestyles. The design of pedestrian systems is often inadequate, failing to effectively encourage social and health-related activities among residents. Insufficient public facilities, a lack of age-friendly designs, and inadequate provision for all age groups, coupled with insufficient public health and medical facilities, highlight the need for enhanced safety and resilience measures.

Scene theory facilitates the precise alignment of amenities with community needs. Amenities are those services and commercial offerings that provide users with pleasure and possess market value, manifesting in facilities, activities, and services. The accurate matching of different amenity elements creates diverse scenes that attract specific demographics and foster particular values and cultural sentiments. In healthy communities, amenities may include community lounges that promote social interaction, markets and supermarkets that provide healthy food options, health facilities catering to all age groups, digital smart facilities, and pharmacies. High accessibility to activity facilities can stimulate habitual use among residents. Moreover, public environments should actively mitigate health risks, integrating Internet of Things (IoT) technologies to enable seamless health monitoring. The synergy of logistics and internet technologies can enhance service delivery, while the incorporation of technological products into healthy environments can facilitate visible interactions.

1.2.3 Intrinsic motivation and new urban dynamics

Scene theory underscores the significance of meaningful social organizational forms. Within a top-down planning framework, health scenes foster intrinsic motivation within communities, encouraging individuals to gather and integrate. This combination of amenities and distinctive activities cultivates a sense of belonging and nurtures grassroots cohesion. Scenes stimulate consumer behavior, intertwining cultural and aesthetic elements to provide residents with enjoyable experiences that foster connections with others and themselves. By constructing healthy communities, there is an opportunity to upgrade facilities and spaces, targeting new business models in health, sanitation, sports, wellness, education, food, and

agriculture. The spatial interfaces embedded within communities can create new employment opportunities and enhance wages, thereby driving new urban dynamics.

2 Healthy community scenes through the lens of scene theory

From the perspective of scene theory, the objective qualities of amenities and subjective values can be harmoniously integrated. Applying scene theory to healthy communities will establish a new academic language that closely connects physical facilities and environments with the behaviors of individuals within the community, ultimately fostering a symbiotic integration of health values.

In existing operational frameworks for healthy communities, entities such as street offices, community party committees, neighborhood committees, and property management companies play crucial roles in organization and service delivery, particularly in community health responses. Scene theory emphasizes empowering residents in community management, enabling more individuals to engage in self-improvement while accommodating a broader range of stakeholders for collaborative discussions aimed at achieving shared objectives[24]. Therefore, in the operational management of healthy community construction, it is essential to leverage the proactive agency of residents as key participants. This involves mobilizing residents to collaborate with other partners and coordinating diverse professional resources—ranging from individual residents to the formation of resident communities, transitioning from passive management to active participation, and evolving from fixed agendas to dynamic activities.

To identify specific directions for constructing healthy scenes, this analysis begins with the five dimensions of scene composition: 1) Community Neighbors: the interactions within community spaces; 2) Physical Structures and Amenities: the specific physical environments or locations where people gather; 3) Diverse Populations: participants in the region, categorized by multiple dimensions such as ethnicity, education, age, and gender; 4) Distinctive Activities: events that reflect local characteristics; 5) Values and Cultural Identity[24,25]. Based on the definition and evolving context of healthy communities in China, and in consideration of the country's unique condi-

tions, this study applies scene theory to propose a sub-scene system for healthy communities. The translation of healthy community elements is structured around these five dimensions, leading to the identification of five categories of elements for healthy communities and further subdivides them into sub-scenes. This approach allows for a comprehensive consideration of spatial behaviors, in terms of their construction, across four key dimensions such as people, physical space, behavioral activities, and cultural significance: 1) Residents and Collaborators: Populations primarily consisting of residents, along with those involved in planning, construction, and operational management of the healthy community; 2) Community Physical Space: Encompassing healthy environments, healthy

living, and healthy transportation; 3) Health Service Facilities: including health services, health facilities, and sanitation; 4) Health Activities; 5) Community Values: Healthy society and health policies (Figures 2-4).

2.1 Residents and collaborators

The concept of a healthy scene is intrinsically linked to specific populations, with its definition contingent upon the characteristics of these groups. Residents and participants form the core of a healthy community, encompassing both individual units and collectives predominantly composed of residents. They contribute to the diversity of the community and foster a positive atmosphere, which attracts potential residents and encourages the adoption of healthy lifestyles.

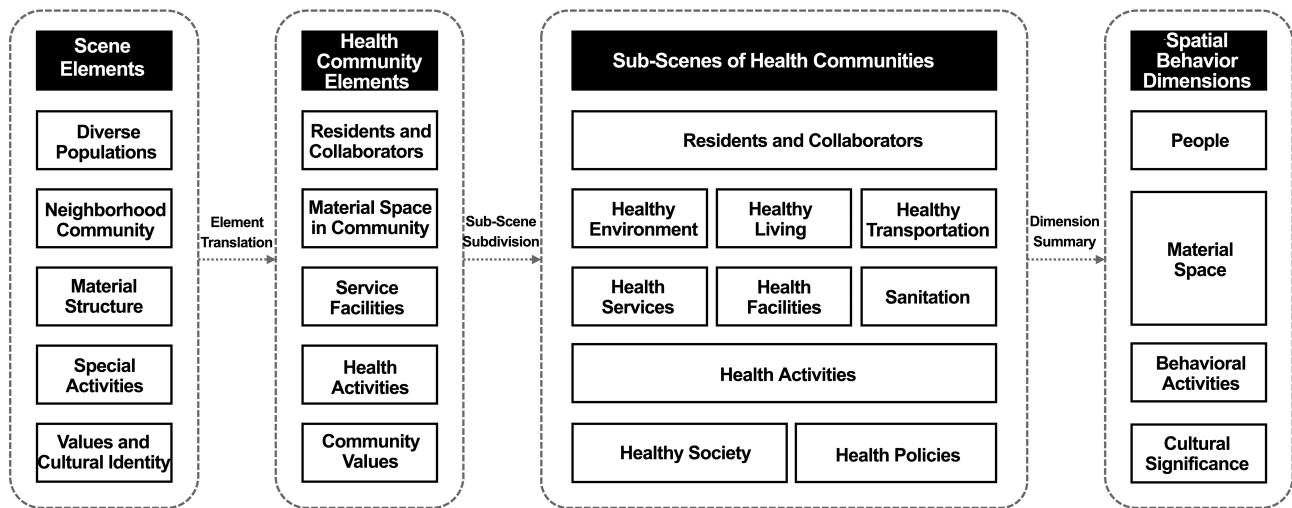


Figure 2 Translation process of scene elements in healthy communities

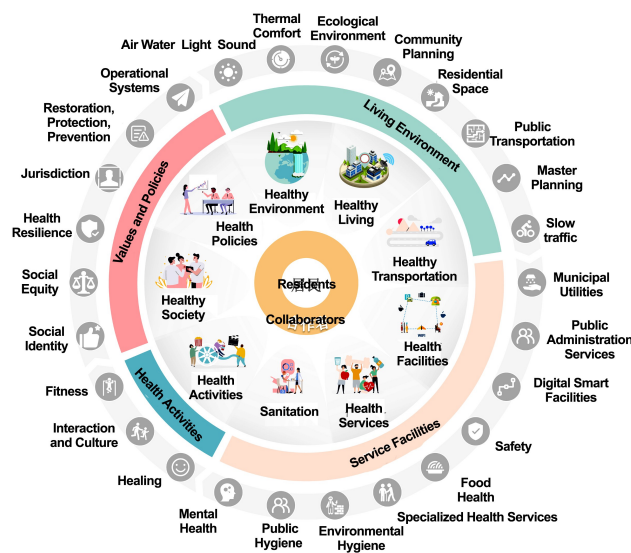


Figure 3 Relationship diagram of healthy community elements and sub-scenes

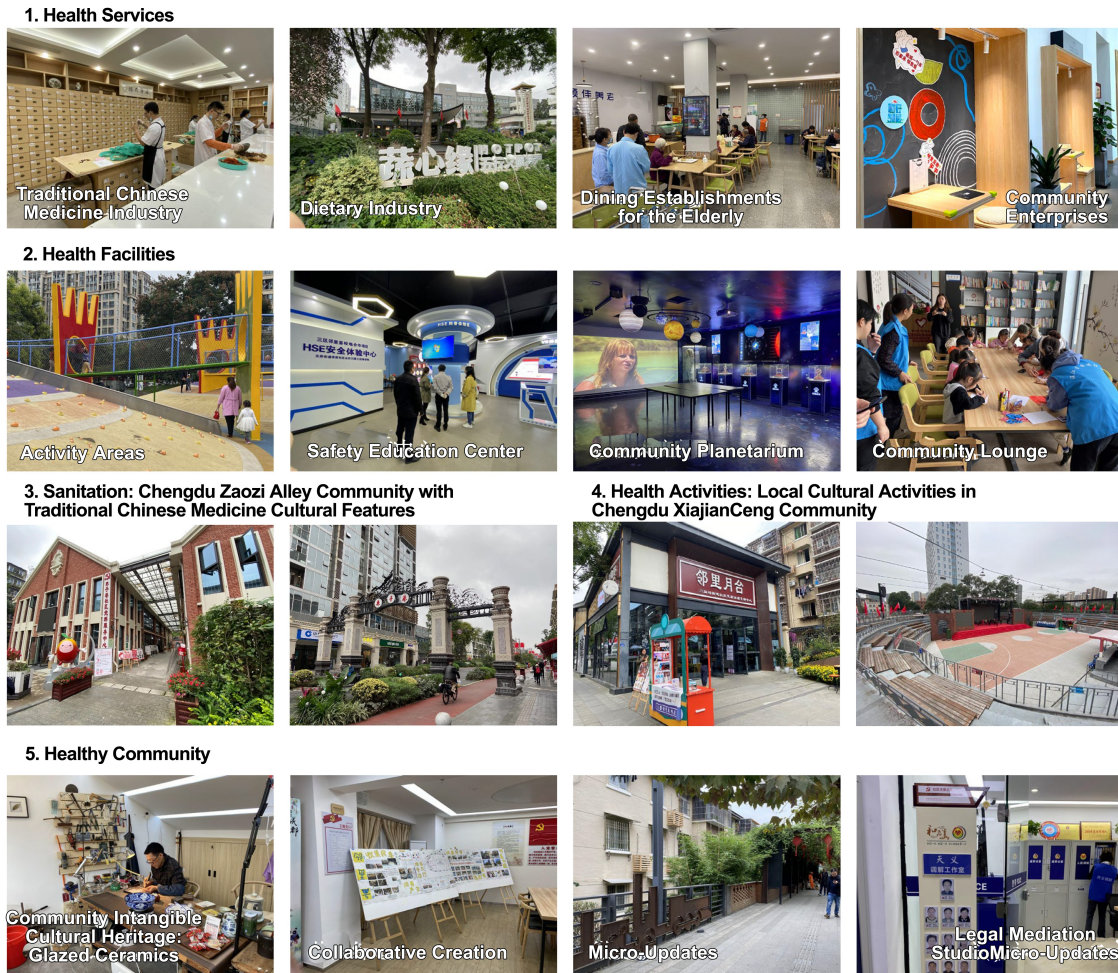


Figure 4 Case studies of healthy community sub-scenes

2.2 Living and environment

(1) Healthy environment. On one hand, a healthy environment includes physical factors such as air quality, water quality, acoustic conditions, and thermal comfort. Maintaining these aspects is foundational to other health-related scenarios, including exercise, mental restoration, and healthy diet[29,30]. For instance, utilizing physical sensors to gather dynamic environmental data within the community can be uploaded to a big data processing platform, enabling timely interventions to enhance and maintain the environment. On the other hand, ecological factors and biodiversity are crucial. Protecting community gardens and green spaces, as well as creating indoor and outdoor environments that are conducive to nature, significantly contribute to the promotion of a healthy community[31].

(2) Healthy living. Healthy living encompasses community planning and residential spaces. Harmful building materials, overcrowded housing conditions, and unsafe

structural designs pose significant threats to mental well-being. Inappropriate site selection and architectural design can foster crime and vandalism. Effective community planning should integrate functional amenities, environmental design, and patterns of openness and sharing, emphasizing public spaces, green systems, and mixed-use development. Within residential spaces, optimizing floor plans, incorporating health monitoring rooms, and designing circulation routes facilitate health management. Enhancements in indoor design, such as improved ventilation systems and water supply infrastructure, contribute to overall health. Building upon the principles of healthy housing, it is essential to create stress-reducing and therapeutic living environments.

(3) Healthy transportation. Healthy transportation includes public transit, overall planning, and non-motorized transport. A multi-tiered public transportation system should be established, featuring well-planned pedestrian

grids, suitable community roadways, and efficient parking systems. The design and integration of bicycle routes and pedestrian pathways should be prioritized, incorporating them into urban greenway planning. Furthermore, it is crucial to develop and manage a comprehensive community logistics system.

2.3 Service facilities

(1) Health services. Health services encompass both foundational and developmental aspects. Foundational services include safety and food health, while developmental services build upon these foundations to provide specialized health services targeting key demographics. Health services operate through various models, including community welfare, commercial activities, and support initiatives, serving as the final outlet for the health industry's marketization within healthy communities.

Safety measures include the implementation of comprehensive security systems leveraging digital technologies, such as facial recognition for contactless entry and robotic food delivery.

Food health encompasses various elements, including cultivation, sales, and education. Examples include urban farming initiatives, integrated online and offline sales, direct-from-farm produce markets, culinary gardening courses, and dining options tailored for the elderly.

Specialized health services focus on vulnerable groups such as women, children, and the elderly, advocating for personalized approaches to alleviate sub-health conditions. For instance, medical and wellness services for seniors may include exercise rehabilitation and physical therapy; women and children-focused initiatives might feature entrepreneurship programs, maternal and infant care, and early education courses; while services for young and middle-aged adults could involve physical therapy, health product retail promotion, and health education. Additionally, community public spaces can serve as incubation platforms for local enterprises, providing essential office spaces.

(2) Health facilities. Health facilities encompass municipal utilities, public service amenities, and digital smart infrastructures. Building upon the optimization of energy and water resource supply, there is a need to enhance cul-

tural facilities and community services tailored for all age groups. Examples include parent-child classrooms, community gathering spaces, health libraries, pop-up health shops, child-friendly amenities, safety education facilities, and small community art exhibition spaces. Additionally, the effectiveness of big data centers and smart business facilities in managing and promoting residents' health is crucial. However, the collection, storage, analysis, and sharing of health data raises significant privacy concerns, necessitating the establishment of regulatory frameworks and legal standards.

(3) Sanitation. Sanitation comprises environmental hygiene, public health, and mental health. Environmental hygiene advocates for practices such as waste sorting, pet management, and composting. Public health serves as the foundational safeguard for healthy communities. On one hand, it is essential to ensure an adequate proportion of general practitioners within the community, enhance the accessibility of community health service centers, and improve access to higher-level medical resources, such as establishing general practice clinics, offering online consultations, and facilitating visits by top-tier physicians to the community. On the other hand, promoting health record management, health education, and the establishment of smart clinics through health facilities is crucial. Additionally, ensuring mental health involves improving psychological counseling services, emphasizing environmental psychology in design, and encouraging neighborhood mutual aid and community volunteer services.

Integration of surrounding medical, research, and health resources is also essential. An example is the Zao Zi Lane community of Chengdu's Jinniu District, proximity to the Traditional Chinese Medicine University and its affiliated hospital. In the process of renovation and upgrading, it is vital to promote the integration of communities with hospitals and universities through open blocks. Establishing Traditional Chinese Medicine (TCM) innovation hubs can facilitate TCM wellness, beauty, and rehabilitation therapies. Additionally, introducing specialty TCM brands, such as health-focused hotpot restaurants and TCM clinics, enhances community offerings. Services such as health record inquiries, health assessments, and expert

consultations should be provided to residents. By guiding businesses toward transformation and encouraging multi-party participation, a culturally distinctive TCM-themed district can be developed.

2.4 Health activities

Health activities encompass healing, social interaction, cultural engagement and fitness. By leveraging healthy environments, spaces such as natural oxygen bars and therapeutic water features can be developed. Shared facilities, including community libraries, gathering spaces, performance stages, after-school programs, and entrepreneurial hubs, facilitate social interactions and cultivate a vibrant community culture. Artists can organize activities such as “Childhood Secrets” and “Claiming Community Flora” to strengthen residents’ sense of belonging. Designing fitness areas and playground spaces can involve utilizing underused spaces, such as elevated floors, undeveloped green areas, and vacant sales offices. Building upon healthy transportation, facilities like walking paths and community fitness centers can integrate virtual fitness equipment, promote fitness sharing, and host family competitions and recreational events to encourage physical activity.

Locally culture-distinctive activities form a crucial part of health activity scenes. For example, the cultural activity center in Chengdu’s Xiajiancao community creates a hub for courtyard culture, hosting various Sichuan cultural events—including Chinese Hanfu (traditional clothing of the Han Chinese), paper-cutting, weaponry exhibitions, Sichuan opera, and the Face-changing Performance—with live-streaming capabilities for online and offline cultural integration.

2.5 Values and policies

(1) Healthy society. A healthy society encompasses social recognition, equity, and resilience. It involves uncovering community history and culture, protecting industrial, cultural, and heritage sites, and fostering neighborhood harmony through micro-community updates. Engaging retired professionals to provide legal counsel and mediation services enhances community support. Organizing co-creation initiatives boosts resident participation and strengthens their sense of community identity.

Preparedness, recovery, and emergency management in the context of healthy communities, along with disease control and the flexible utilization of spatial resources[32], ensure that healthy communities can effectively respond to public health emergencies.

In the revitalization of aging neighborhoods, leveraging existing building stock while seeking policy support to attract investors is essential. Through spatial exchanges or compatible uses, transformation and upgrades can achieve a balance among diverse stakeholders. For instance, the Xiajian Cang community in Chengdu’s Chenghua District repurposes former industrial sites, such as an old locomotive factory, into a community service center, creating a neighborhood hub that preserves industrial heritage while providing an incubation platform for local enterprises and fostering new community scenes.

(2) Health policy mechanisms. Health policy mechanisms encompass governance, restorative protection and prevention, and operational frameworks. To facilitate the renovation of aging neighborhoods, establishing community foundations is essential to mobilize funding. Encouraging resident participation is vital, fostering a community partnership model that promotes collaboration between businesses and the community, thereby enhancing local agency and stimulating community employment.

3 Health scene analysis

Existing domestic and international evaluation standards for health communities vary in focus and contribute differently to guiding the development of healthy communities. The nine sub-scenes of healthy communities serve as a unified measurement tool to address discrepancies in the content of healthy community development across different contexts. The evaluation criteria reflect, in an objective and rational manner, the directions that governing bodies believe require enhancement and attention in healthy communities.

In contemporary healthy community development, these standards have been adopted as benchmarks for practitioners to aspire to. Compared to national planning guidelines and regional action frameworks, evaluation standards exert a more direct influence on the operation and implementation of healthy communities. While they

may not capture the diversity of specific projects, they provide a macro-level significance. The “Health Community Evaluation Standards” compiled by the Urban Planning Society of China and the “WELL Health Community Standard” developed by the International WELL Building

Institute feature more established and representative evaluation metrics, each with a robust calculation system. Therefore, a comparative analysis of these two standards in relation to the sub-scenes of healthy communities is warranted.

Table 2 Scores and Weights of the Domestic Version of Standards for Healthy Community Assessment

Evaluation indicators Categories	Air α_1	Water α_2	Comfort α_2	Fitness α_4	Culture α_5	Service α_6	Innovation α_7
Maximum score (α)	100	100	100	100	100	100	10
Weight (β)	0.175	0.185	0.185	0.175	0.205	0.075	0.1

For instance, using the “Health Community Evaluation Standards” as the analytical framework, the categories of air, water, comfort, fitness, culture, and services are each assigned a score of 100, while the innovation category is awarded additional points, capped at a maximum of 10. The weights of each indicator and the total score are

presented in Table 2. A comparison is conducted using the nine-scene model framework established earlier, analyzing the correlation between these standards and the nine scene models (Table 3). The emphasis index γ of the “Health Community Evaluation Standards” on the nine scene models is calculated as $\gamma = Q \times \beta$ (Table 4).

Table 3 Indicators’ Meanings and Correspondence with Nine Sub—scenes in the Domestic Version of Standards for Healthy Community Assessment

Scene model	Indicators from the “Healthy Community Evaluation Standards”						
	Air Q1	Water Q2	Comfort Q3	Fitness Q4	Culture Q5	Service Q6	Innovation Q7
Healthy environment	74	100	52				
Healthy living			48				3.53
Health facilities					73		
Healthy transportation					10		
Health activities				100		20	
Healthy society					5		2.94
Public health	26				12	33	
Health services						43	3.53
Health policies						4	

Table 4 Importance Index of the Nine Sub—scenes in the Domestic Version of Standards for Healthy Community Assessment

Scene model	Indicators from the “Healthy Community Evaluation Standards”							
	Air	Water	Comfort	Fitness	Culture	Service	Innovation	γ
Healthy environment γ_1	13	18.5	9.62					41.07
Healthy living γ_2			8.88				0.35	9.233
Health facilities γ_3					15			14.965
Healthy transportation γ_4					2.05			2.05
Health activities γ_5				17.5		1.5		19
Healthy society γ_6					1.03		0.29	1.319
Public health γ_7	4.55				2.46	2.48		9.485
Health services γ_8						3.23	0.35	3.578
Health policies γ_9						0.3		0.3

Using the same methodology, an analysis of the “WELL Health Community Standard” is conducted, accompanied by a visual representation (Figure 5). Within the “WELL Health Community Standard,” significant weight is placed on healthy environments and healthy living, followed by healthy societies. Conversely, the “Health Community Evaluation Standards” emphasize healthy environments, health activities, and health facilities. Both standards focus on enhancing the health-oriented performance of the built environment, relying on the built environment to facilitate social activities.

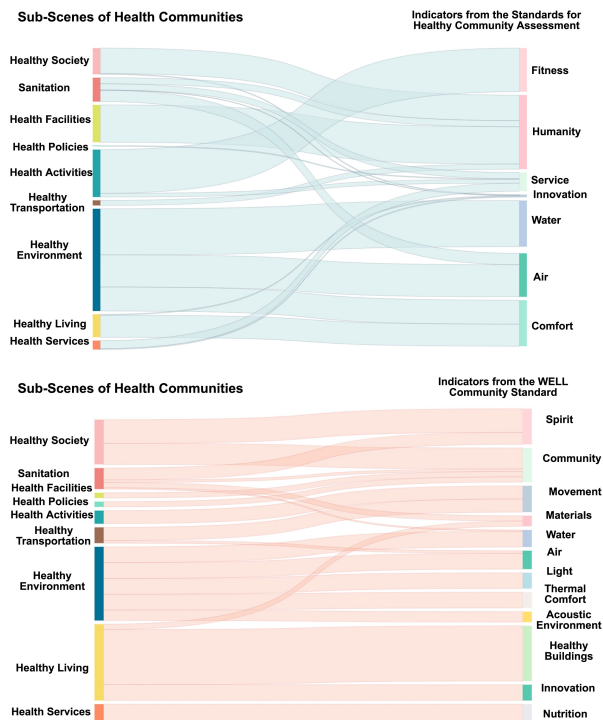


Figure 5 Comparison between Sub-scenes of Healthy Community and the Indicators of Existing Standards

However, both standards address health services and health policies to a lesser extent, as they are classified as standards rather than guidelines. The most significant difference between the two lies within the healthy living sub-scene, where the “WELL Health Community Standard” demonstrates notably higher attention. This heightened focus is attributable to the emphasis that the research bodies associated with the “WELL Health Community Standard” place on health-certified and green-certified buildings, which are weighted more heavily in their assessment criteria.

Building upon existing standards and guidelines for

health communities, the enrichment of scene theory can enhance the discourse surrounding the development of healthy communities, facilitating a more visualized representation of these environments. For instance, beyond their role as mere “residents,” individuals in healthy communities engage in life as consumers, encompassing activities such as working, resting, and seeking medical care. This shift emphasizes the cultural health values present in specific health scenarios. Health facilities and services play a crucial role in promoting resident consumption, contributing to vitality and positive health experiences, which in turn fosters high-quality community development. In guiding community development, it is essential to build upon existing standards and guidelines by advancing the sub-scenes related to health facilities and services, as well as refining health service and policy frameworks.

4 Health community development from the perspective of scene theory

Through existing theoretical research and comparative studies of established standards, scene theory enriches the human-centric nature of health community scenarios and advances theoretical practices, providing a visual direction for community development. This focus on content and operational frameworks will promote healthy behaviors among residents within health communities.

4.1 Health Community Scene Development Toolkit

The Health Community Scene Development Toolkit aims to leverage the aforementioned five elements and nine sub-scenes to activate existing and potential comforts within the community, based on the needs of residents and collaborators. This approach will facilitate diverse health activities and foster social values aligned with the principles of healthy communities. The toolkit’s database includes both domestic and international case studies of community development practices, as well as policies, guidelines, directives, and evaluation standards related to health communities, providing essential case support for health community construction (Figure 6).

(1) Collaborative needs assessment and blueprint development: Initially, demographic profiling and basic surveys of residents and collaborators will be conducted. This involves collecting data on residents’ age, education level, and occupation

through questionnaires, interviews, and focus groups to understand their activity types, health needs, and satisfaction with community spaces and activities. Subsequently, an investigation of the community's physical spaces and service facilities will be undertaken, focusing on enhancing the quality of the physical environment within the three sub-scenes: Healthy environment, healthy living, and healthy transportation.

Simultaneously, emerging technological methods, such as new urban science, will be employed to evaluate health service facilities. This will result in a comprehensive checklist and indicators for health services, health facilities, and health hygiene, addressing community shortcomings and ensuring an appropriate number and scale of service facilities within a reasonable living circle.

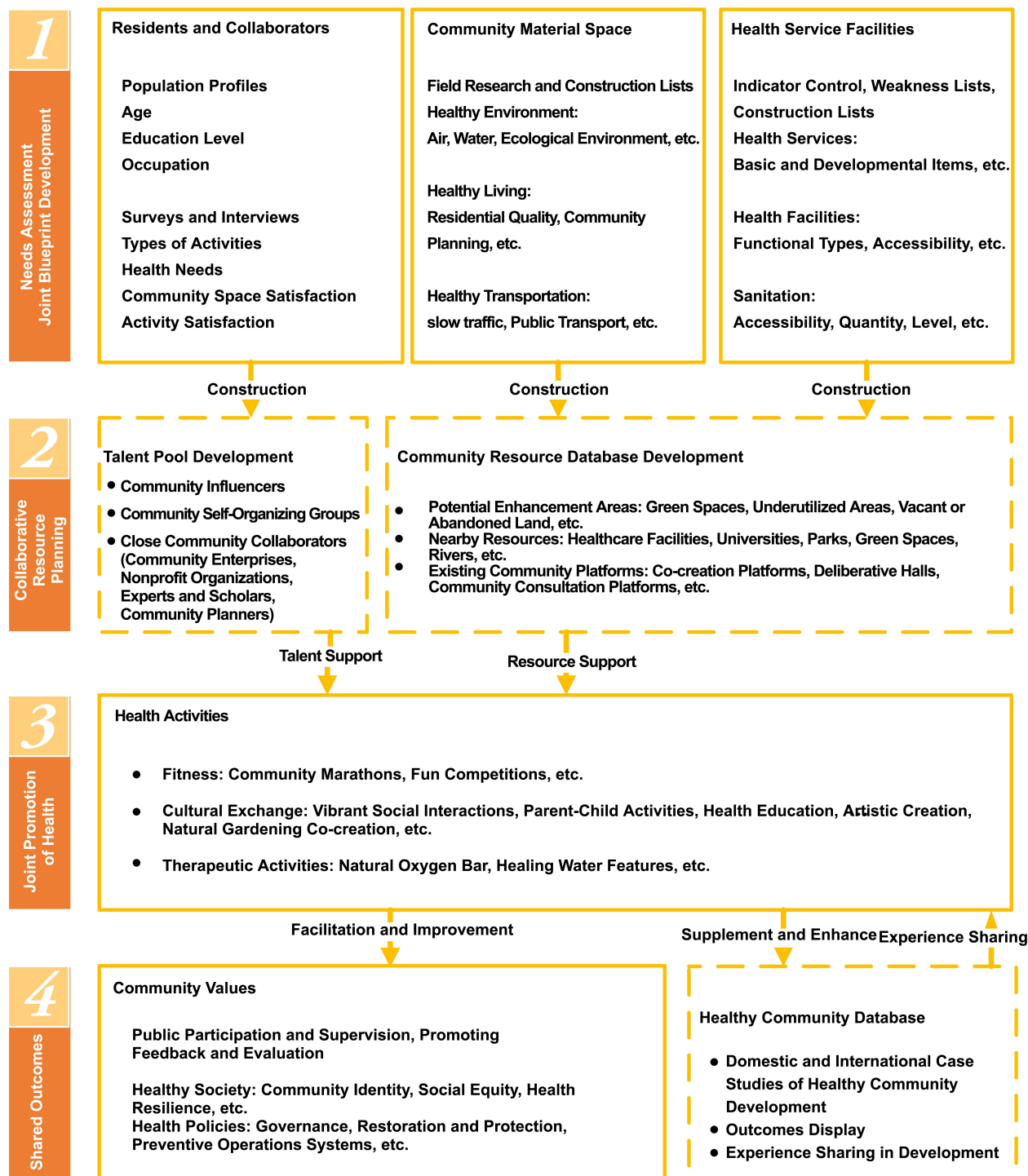


Figure 6 Toolkit for Building the Scenes of Healthy Community

(2) Collaborative resource mobilization: Based on surveys of residents and collaborators, the process involves identifying community talents, self-organized groups, and close collaborators to establish a talent pool for health community development. Collaborators include community enterprises, nonprofit organizations, experts, scholars, and community planners. Additionally, through the investigation of the community's physical spaces and health service facilities, potential areas for enhancement will be identified, such as community green spaces, underutilized corners, and vacant or abandoned land. This phase also includes integrating nearby resources—such as healthcare facilities, universities, parks, green areas, and rivers—to develop the health community, while linking to existing community platforms such as co-creation platforms, deliberative halls, and community negotiation spaces.

(3) Collaborative promotion of health: In response to the community's specific context, distinctive health activities that cater to different residential types will be developed, encompassing aspects of health, social interaction, culture, and healing. Throughout this process, the established talent pool will be leveraged to seek support, while the community resource database will be accessed for resource assistance. Additionally, the health community database will be explored for benchmarking case studies that can inform development.

(4) Shared outcomes: The development process will emphasize public participation and oversight, facilitating evaluation and feedback mechanisms. For example, the use of mobile applications and other technological platforms will enable the collection of opinions and feedback from the health community development process both online and offline. Results of the development will be showcased, experiences shared, and the existing health community database enriched. This approach aims to advance the creation of healthy social and policy environments, stimulating development across provinces and cities nationwide, and promoting the integration of health community development frameworks into national land-use planning systems.

4.2 Operational system for diverse participation in health communities

The realization of health communities relies on the collaboration of various organizations and populations within the community, encompassing both macro-level government planning and grassroots participation from diverse urban forces. Within the nine sub-scenes of a health community, a robust model of diverse participation emerges, centered on residents and the community, integrating a variety of collaborators. This includes expertise in architectural planning, social sciences, and data analytics, which will serve as foundational support for the advancement and implementation of health communities (Figure 7). Diverse participation facilitates consumption and drives economic development in the construction of health scenarios, while simultaneously guiding residents toward the formation of healthy behaviors and fostering the emergence of a healthy society.



Figure 7 Community, residents and collaborators

The approach advocates for government leadership to secure policy formulation and funding support, while gradually introducing market-driven entities to cultivate new business models for sustainable development. Collaboration with community organizations enriches cultural life and establishes a cooperative mechanism for diverse participation. For example, in Chengdu's Hemei Commu-

nity, a social enterprise community service station was established. Through clear delineation of responsibilities among the management committee and social enterprises, a service network was created based on market operations and nonprofit organization models, leading to the development of a new operational model for community complexes.

Conclusion

This analysis of the current state of health community research in China summarizes the definitions and developmental trajectories of health communities both domestically and internationally. It conducts a comparative review of the forefront issues, research entities, and conceptual frameworks surrounding health communities worldwide. Utilizing scene theory, the relationship between the material environment of health communities and the behavioral patterns of their inhabitants is explored. By applying the tools of scene theory, this study identifies five essential elements of health communities—residents and collaborators, community material spaces, health service facilities, health activities, and community values—along with nine sub-scenes categorized under these elements: Healthy environment, healthy living, healthy transportation, health services, health facilities, health hygiene, health activities, healthy society, and health policy. A comparative analysis of typical standards for health communities, both domestic and international, is conducted using these sub-scene tools, further enriching the content of health community development and refining the scene content system. The analysis emphasizes the core of these sub-scenes—residents and collaborators—and proposes an operational system characterized by diverse collaborative participation.

Health and well-being represent significant demands in contemporary settings and are critical areas of focus for communities in the post-pandemic era. Future theoretical research should integrate more health community practices, fostering interdisciplinary studies across planning, medicine, psychology, and sociology, ultimately leading to the formulation of improved guidelines for health community development based on existing standards and frameworks.

Figure and table sources

Figure 1, Table 1: Compiled and illustrated based on information from references [2], [4], [5], [8], [11], and [12].

All other figures and tables were created or photographed by the author.

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