



PLACEMAKING FOR AN AGING POPULATION

Guidelines for Senior-Friendly Parks

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UCLA Complete Streets Initiative
Luskin School of Public Affairs
Lewis Center for Regional Policy Studies
June 2014

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ACKNOWLEDGMENTS

Funding Support

This report was made possible by the generous support of The Rosalinde and Arthur Gilbert Foundation, and in part, by the Archstone Foundation. The Rosalinde and Arthur Gilbert Foundation is committed to providing and connecting resources to organizations that promote and improve health, education, economic and cultural opportunities to communities in California and Israel. The Archstone Foundation's mission is to contribute towards the preparation of a society in meeting the needs of an aging population.

Student Researchers

We would like to acknowledge the invaluable work of UCLA Luskin graduate student researchers and research affiliates who contributed to this effort.

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Credit: Andrew Hardacre

CHAPTER 1

INTRODUCTION

Why Parks for Older Adults?

Parks represent valuable assets for cities as they provide recreational opportunities, serve as places for social interaction and offer a natural respite to urban dwellers.¹ Parks can be particularly beneficial to older adults who may be at risk for social isolation. Enumerating the general characteristics of “Age-Friendly” cities, the World Health Organization lists housing, transportation, social participation, community support and health services, communication and information, social participation, civic participation and employment, and outdoor spaces and buildings, which include parks and open spaces² (Figure 1).

In addition to their increased risk for social isolation, elders face more risk than other age groups for deteriorating physical and mental health and sedentary lifestyles. According to the Administration on Community Living (formerly Administration on Aging), about 30% of elders in 2010 were living alone, and among women over the age of 75 that percentage was almost 50%.³ Social isolation can lead to loneliness and mental health problems experienced by some elders, who also become more vulnerable to physical health issues and early death. Parks can reduce the prevalence of social isolation, provide opportunities for intergenerational interaction, and create a sense of place and attachment. Indeed, parks can offer a great deal more than simply a place to go outdoors. They provide settings where elders can interact with other elders, exercise, visit together with their families, or tend to their grandchildren.

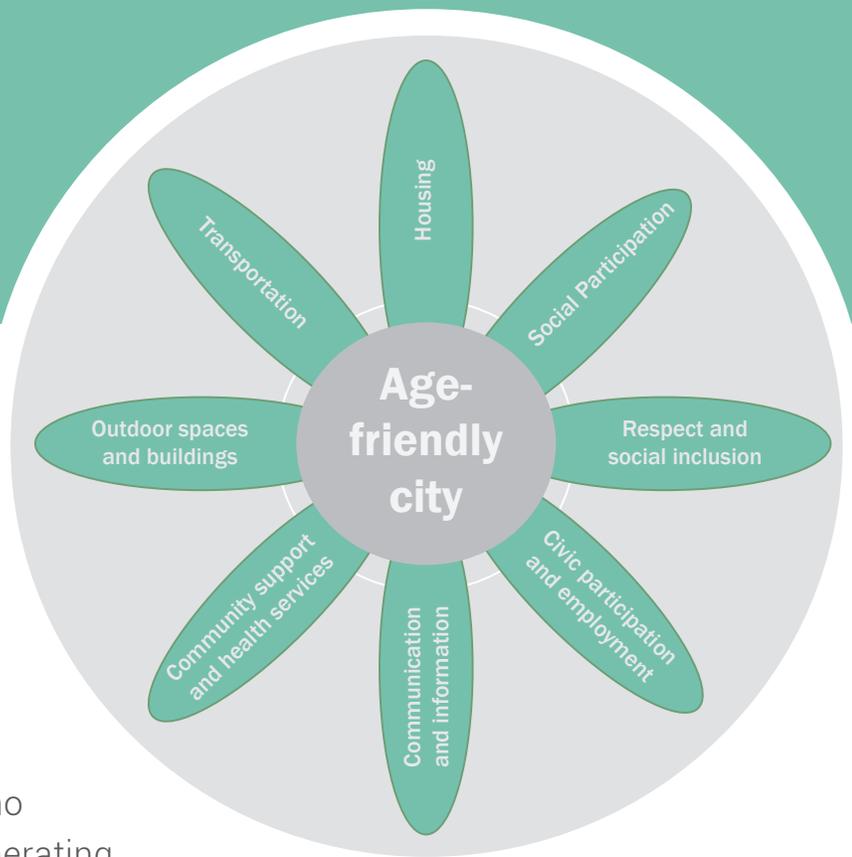


Figure 1: Age-friendly city elements.

Credit: World Health Organization, 2007



Figure 2: Garden of Hope at All Children's Hospital in Florida. Credit: All Children's Hospital

People get emotional attachment to places other than their home, sometimes referred to as “third spaces.”⁴ Older adults are more likely than younger adults to have lived in a singular place for a long period of time and consequently feel more attached⁵. If parks and other open spaces are part of the third spaces for community elders, they can help them develop a positive connection to their surrounding environment and feel part of their community.

At the same time, the connection between people and nature is a deep bond that reaches back thousands of years and has also been associated with healing processes.⁶ The healing power of nature extends to both physical and mental health. Hospitals found that people with less stress healed faster.⁷ When people are under stress, the brain releases cortisol. High cortisol levels in elders can cause decreases in learning and memory and increase the risk for dementia and other cognitive impairment.⁸ Exposure to nature can reduce stress, thus improving cognitive function and performance.⁹ Since older adults are the most at risk for such ailments, it is important to have spaces like parks and greenery that allow for relaxation and stress reduction.



Figure 3: Indoor chair aerobics for seniors.

Credit: Prince George County Dept. of Parks and Rec

Despite the strong link between physical activity and health, older adults represent the most inactive portion of the population. Physical activity tailored to the needs of participants can benefit even the oldest and most frail elders.¹⁰ A tailored physical activity regimen may even slow the aging process.¹¹ Therefore, providing parks as a safe, welcoming outlet for elders to exercise is of vital importance to their health and quality of life.

Report Need and Purpose

Unfortunately, people over the age of 65 in the U.S. remain a highly underserved group in regards to parks. This gap exists despite the many benefits of parks, which among other things also include a positive relationship between physical and emotional well-being. Additionally, parks provide an opportunity to spend time in a natural setting and undertake activities including exercising, gardening, walking or simply meditating in nature.¹² Programming activities for seniors in parks, rather than designing the parks with the seniors in mind, is the norm. Even so, only a few parks offer senior-friendly programming or have senior centers that offer recreational or educational programs, such as arts and crafts, dancing, yoga, or aerobics. Often, seniors attend these programs

Figure 4: Outdoor exercise classes for seniors.

Credit: Marco Sarli



inside buildings rather than in an outdoor environment. Indoor activities have social, physical and intellectual benefits but these could be greatly expanded by taking place in an outdoor setting, where elders can access nature.

U.S. cities should design and program more senior-friendly open spaces to fulfill the current unmet need and prepare for the growing aging population. This report is a first step towards this direction. It is designed to help planners, landscape architects, open space advocates, senior citizen advocates, community groups, and government organizations to better understand how urban parks and open spaces can be appropriately designed to serve elders explicitly but also all urbanites.

Many organizations recognize the need for focusing on older adults. Individuals aged sixty and over currently represent approximately eighteen percent of the population in the U.S., and that figure will continue to grow. As shown in Figure 5, by the year 2050, 1 in 4 adults in the United States will be over the age of sixty.

Organizations such as the World Health Organization (WHO) and the American Planning Association (APA) try to respond to this demographic change through efforts to understand and accommodate "aging in

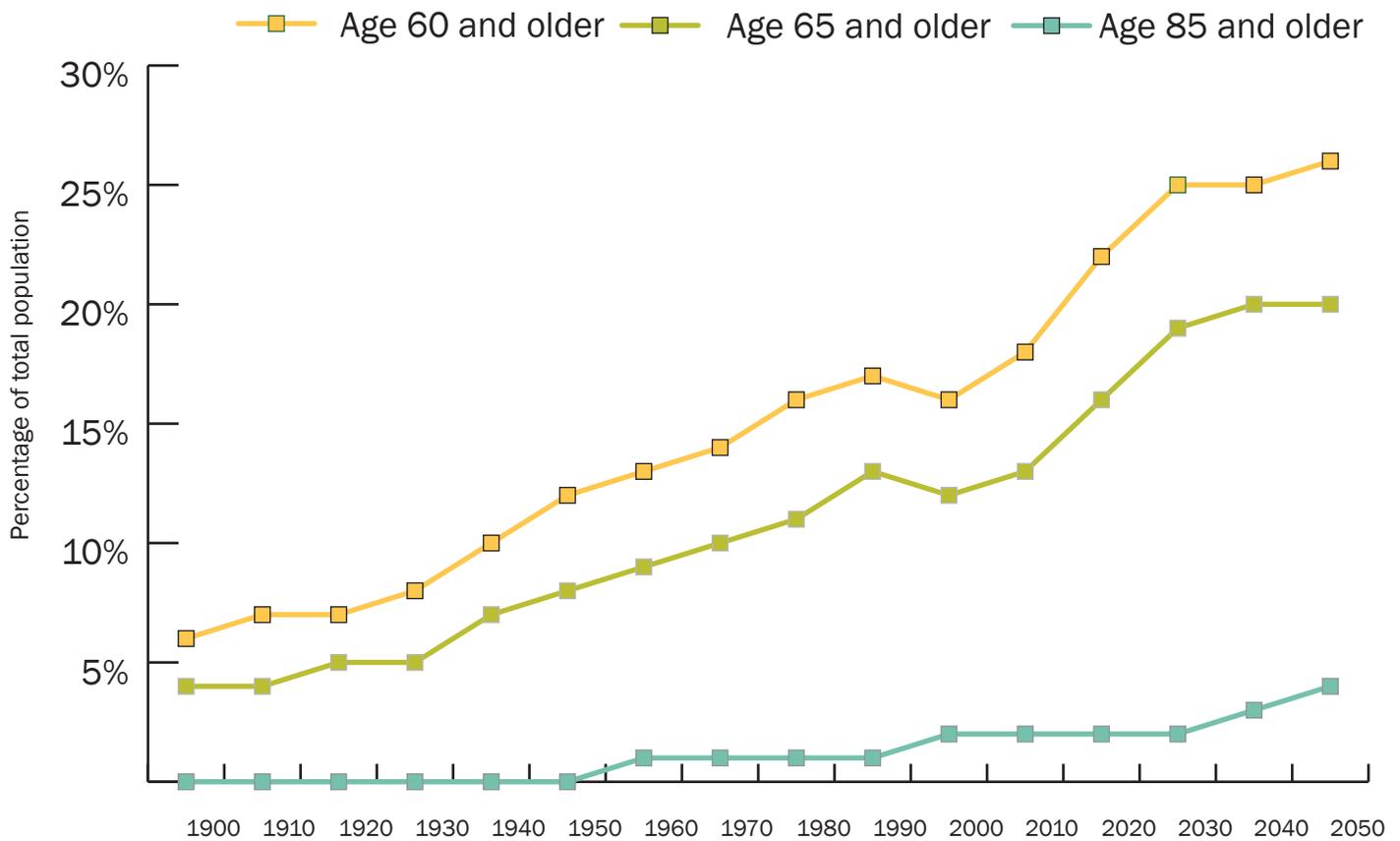


Figure 5: Percentage of people over 60 in the U.S.: 1900-2050. Credit: Administration on Aging

place” and create “age-friendly” cities.¹³ These efforts include open space as an important element of the urban form but provide little detail on how to design it in order to better fit the needs of older adults. Older adults are not a homogeneous group, which only adds to the challenge. Their patterns of use and preferences about open spaces are influenced by socio-demographic and cultural characteristics.¹⁴ Yet, little knowledge exists about the needs and preferences of different groups of older adults in regards to neighborhood open space or the influence of objective and subjective features of the neighborhood built environment on their physical activity patterns (e.g., walkable streets, availability and proximity of parks and recreational facilities, availability of exercise equipment, pedestrian amenities including sidewalks or footpaths, adequate lighting, and intersection crossing features; aesthetics such as foliage, pleasant scenery).¹⁵

Thus, the purpose of this report is to identify and to compile information from different sources about the needs and preferences of older adults in regards to open space and synthesize it in the form of design guidelines for senior-friendly open spaces in cities.



Figure 6: St. Barnabas Senior Center.

Credit: Liz Devietti

Data Sources

The report that follows draws information from different sources to understand how parks can be best designed for elders.

First, we undertook a systematic review of the scholarly literature from different fields (including public health, gerontology, urban planning, landscape architecture, urban design, and leisure studies) to identify research relevant to the intersection of elders, parks, and physical activity. Second, we reviewed professional reports of agencies, planning departments, and parks and recreation departments, as well as articles and blogs on two particular topics: 1) descriptions and evaluations of parks built for elders around the world; and 2) toolkits and “how-to” manuals for creating age-friendly built environments. Third, we interviewed representatives from nine different local, state, and federal agencies and organizations that focus on issues relating to aging or parks and open space. The purpose of these interviews was to identify the agency perspectives and initiatives in regards to planning and designing open spaces for older adults. Lastly, we conducted eight focus groups with elders and their caregivers at St. Barnabas Senior Citizen Center in the Westlake neighborhood of Los Angeles to understand the elders’ open space and physical activity needs and preferences.

Report Structure

Following this introductory chapter, chapter 2 draws from the scholarly literature in urban planning, recreation and leisure studies, physical activity studies, psychology, and gerontology to assess what scholars in these different disciplines tell us about the elders' biological, psychological, social, and physical activity needs for open space.

In addition to the scholarly literature, national, regional, and local organizations focusing on issues related to aging or parks and open space have important perspectives to add to this discussion and body of knowledge. Thus, in chapter 3, we examine the perspectives and policy initiatives of different agencies such as the Administration on Community Living (formerly Administration on Aging), the American Association of Retired Persons (AARP), the National Parks Service, the California Department of Parks and Recreation, among others. Interviews with agency staff gave us information about how they perceive the open space needs of elders and what, if any, particular programs or efforts they are undertaking to address these needs. Many interviewees perceived the open-space aspirations of elders as similar to those of the general population but saw their needs as requiring some additional considerations. The principle of *universal design*, creating urban form that is accessible to older people and people with and without disabilities

Figure 7: Strolling in the sun. Credit: Susan NYC



Figure 8: Hyde Park Senior Playground, London.

Credit: First News



drives the programming considerations of many agencies including National Parks Service's effort to bring park rangers to senior-citizen centers and present programs as if the elders were in a park. The representatives from these organizations emphasized that much more can and should be done to serve older populations, and recognizing this need is the first step in addressing it.

Some cities around the world are beginning to provide open space opportunities directly targeted at older adults. However, these cities are few and far between, and their practices are relatively unknown to U.S. policymakers and municipalities. Indeed, little shared knowledge exists about where these parks are located, what distinguishes them from other parks, and how they are received by older adults. Chapter 4 highlights existing examples of "playgrounds for seniors" from places around the world including Canada, Finland, Great Britain, Germany, Spain, Japan, Singapore, and China. While a few existing domestic examples complement the international examples, the former appear to be earlier in the planning stage, yielding very few physical designs to examine and share. Nevertheless, these early efforts may serve as examples of how some cities around the world have been responding to elders' needs for open space as well as passive and active recreation outdoors.



Figure 9: MacArthur Park.

Credit: Liz Devietti

The relative lack of research about the open space needs of older adults is accompanied by a complete lack of senior-friendly recreational and park facilities in most U.S. cities. To make matters worse, a number of American cities, including Los Angeles, suffer from an uneven distribution of urban open space.¹⁶ Many researchers and open space advocates have conducted analyses to examine various demographic groups' access to open space. They have found that access varies widely by neighborhood but largely corresponds with economic prosperity.¹⁷ For example, many low-income neighborhoods in the densely populated areas of Los Angeles have less than one acre of park space per 1,000 residents,¹⁸ while only thirty percent of children in the city have easy access to parks.¹⁹ Unfortunately, we have very little knowledge of seniors' access to parks.

While in other parts of the world municipalities are providing open spaces for their elders, most such efforts in the U.S. happen within the private confines of a few senior citizen centers and facilities for assisted living, not in public parks. As such, only a subset of older adults can access them. Indeed, the provision of open space for elders by the private or nonprofit sectors should be complemented by the provision of municipal facilities or outdoor recreation areas with exercise machines or other opportunities for physical activity, that are open and accessible to all. There may be even opportunities for collaboration



Figure 10: Hongshan Park.

Credit: Ciskavan Geer

and synergy among public, private, and nonprofit entities. One such example is in the works in Los Angeles, where a nonprofit, the Los Angeles Neighborhood Land Trust (LNLT), is collaborating with the Los Angeles County to acquire a parcel of land and convert it into a park for older adults. The site is in Westlake, a very dense, low-income neighborhood of Los Angeles and in close proximity to St. Barnabas Senior Citizen Center. The LNLT is looking for design recommendations for how to make the park most appropriate for the senior community. Currently, no explicit design recommendations exist. The elders' voices and perspectives are rarely incorporated in the design of built form. This report seeks to fill this void. Through a series of focus groups with elders, family caregivers and staff at St. Barnabas, we have collected information about the elders' open space needs, preferences, and values about the forthcoming park. These appear in chapter 5.

Lastly, chapter 6 synthesizes the information gleaned in this study in ten overall objectives, specifically discussed in reference to how open spaces for older adults should be designed. In this vein, the chapter develops a series of design and policy suggestions and recommendations.

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Credit: Ernesto De Quesada

CHAPTER 2 THE ELDERS' NEEDS FOR OPEN SPACE AND PHYSICAL ACTIVITY



Figure 11: Socializing. Credit: Elaine Lee

Literature Overview

The peer-reviewed literature on open space, physical activity, and elders is relatively small. A systematic search of age and health-related databases yielded a total of forty-four peer-reviewed articles on the topic published between 1970 and 2013. Of these, twenty-two were specific to elders, while the others were relevant to the general population including elders. This elder-specific literature provides some insight into elders' needs for open space and physical activity.

The core question for the literature review is: Do elders have different open space and physical activity needs relative to younger persons? This chapter will address this question empirically by examining the scientific evidence for the elders' unique needs relative to the rest of the general population. Based on principles of gerontology or the study of aging, theoretical and conceptual reasons exist as to why elders may have distinct open space and physical activity needs relative to other populations. Reviewing these principles provides a conceptual framework for the subsequent review of the literature on the open space needs of elders.

Four major principles related to the study of aging include:

1. the almost universal preference of elders to “age in place,” despite the intersection of aging and biological/health issues;¹
2. the psychological underpinnings of elders’ need for independence;²
3. the social and cultural diversity among elders as they age, especially in relation to their risk for social isolation;³ and
4. the inevitable, continued development of elders over their life span in which they interact with their environment and adapt and compensate for physical constraints attributable to chronic disease and/or behavioral limitations.⁴

A Biopsychosocial Approach to Aging in Relation to Open Space Needs

The first three principles discussed previously compose different parts of a biopsychosocial approach,⁵ which underscores that while human aging has distinct biological, psychological, and social aspects, these aspects overlap (see Figure 12). Thus, the interrelationships of the three dimensions as they pertain to elders’ open space needs must be considered. While the evidence for elders’ open space needs will be presented sequentially according to these three dimensions, they ultimately influence one another to the extent of being part of one “whole”—the elder.

Biopsychosocial Approach to Understanding Health

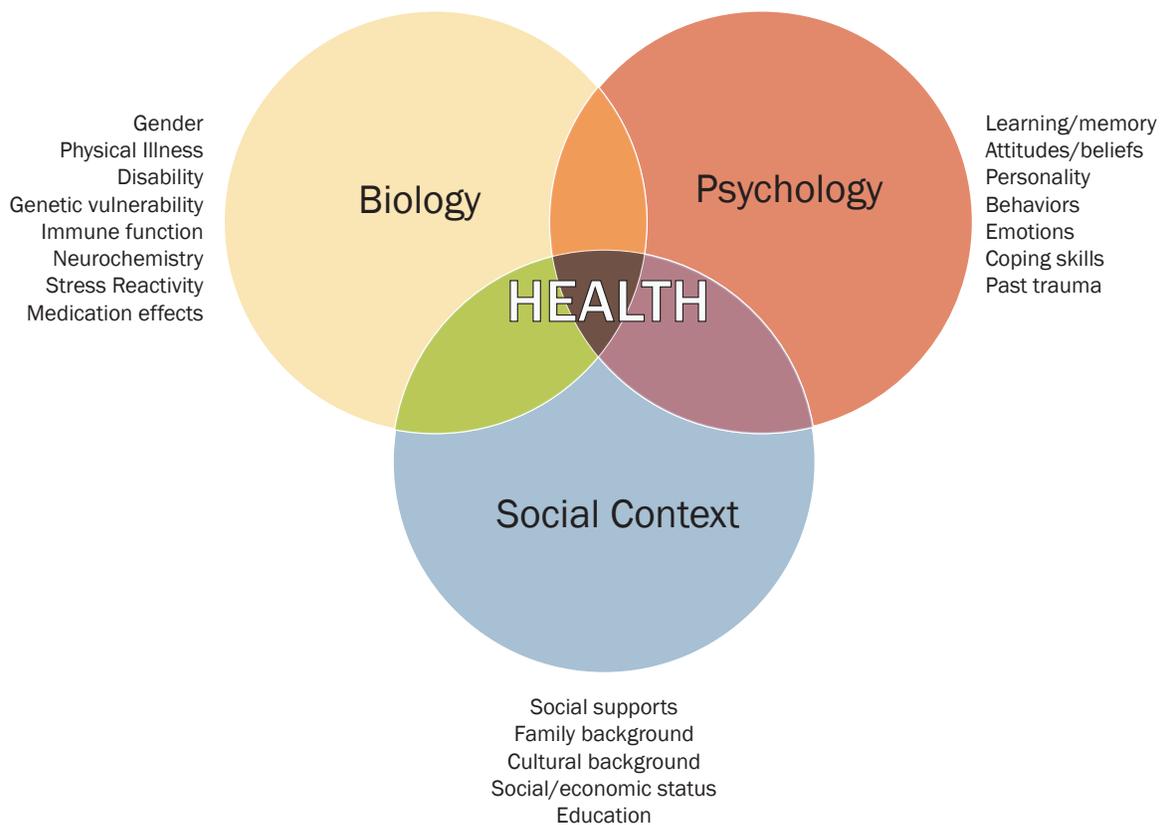


Figure 12: The biopsychosocial model of health. Credit: <http://perspectivesclinic.com/health-psychology/>

Biological Needs

Older adults prefer to “age in place,”⁶ usually in their own homes. However, their increased risk of developing health issues as they age often challenges this preference. Open space and the positive influence that it can have on elders’ health may help elders continue to “age in place.” Moreover, neighborhood open spaces may also be considered “places of aging” or locations outside of the home that also influence the well-being and quality of life of elders.^{7,8}

Until 1946, the concept of health was generally defined as the absence of disease or illness. In 1946, the World Health Organization (WHO) broadened the definition to “a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.”⁹ In regards to needs for open space, elders express their physical health needs in the context of more subtle mental and emotional health needs. Thus, a study from Bogota, Columbia, found that elders’ perception of safety in neighborhoods was strongly related to self-reported physical

Figure 13: Grand Park.

Credit: Waltarrrrr



health status.¹⁰ A similar finding was observed by a study in Great Britain that also found a positive association between feelings of safety in neighborhood open space and life satisfaction.¹¹ In focus group discussions of age-friendly neighborhoods in Edmonton, Canada, elders mentioned safety and security along with good accessibility and places to rest as desirable park characteristics.¹² Elders with dementia and their caregivers reported in focus groups how aspects of outside spaces can be therapeutic (e.g., feeling “free”) but also frightening (e.g., getting lost or becoming disoriented about location and direction). Elders in this study made special mention of their and their family’s anxiety if they end up in an unfamiliar environment without guides.¹³ Researchers in Helsinki, Finland designed an urban park with the objective to maintain the physical and mental ability of seniors. Key features sought to strike a balance between their physical health needs (e.g., providing handrails, lighting and benches) and mental/emotional needs (providing a safe environment with maps and route markers).¹⁴ Another study in a nursing home of Helsinki, Finland found that self-reported health of elders, a major predictor of physical health outcomes, related positively to more frequent visits to outdoor space with greenery.¹⁵ Indeed, researchers have found that physical health benefits from outdoor space pertain to even the frailest of older adults,¹⁶ especially if they raise feelings of comfort, safety/security, and aesthetic pleasure.¹⁷

In another study, a systematic analysis of open spaces frequented by older adults using observations and surveys enabled the recommendation of ergonomic features.¹⁸ The researchers carefully noted the “normal,” age-related biological changes with increasing age: reduction in muscle strength; higher levels of fatigue; reductions in agility, coordination, equilibrium, flexibility, joint mobility and increased rigidity in the tendons. They detailed similar reductions in sensory capacities of hearing and vision. Drawing from their findings, the researchers suggested the use of contrasting colors on flooring and benches, graphics in addition to words on signs, shorter paths, benches optimized for accessibility (via wheelchair) and social interaction, part shade/part sun so as to allow choice, and intermediate or low lighting levels.¹⁹ Interestingly, all ergonomic suggestions pertain directly to normal aging, which is not a disease in and of itself, but, rather “wear and tear.” Such recommendations become even more important for elders with at least one chronic health condition/disease.

Another study from Great Britain found that aside from more general preferences such as toilet facilities, trees, plants, and maintenance, elders noted a strong preference for things to look at while in the park and for limited traffic and lack of nuisance.^{20,21} Columbian elders also noted a similar preference for limited vehicular traffic.²²

In addition to park design features, the trip to or from the park should be considered. Thus, having public transportation that is accessible (i.e., not too far from their homes) is especially important to disabled elders, who also benefit from handicapped parking.²³ Studies have found elders expressing the desire of having parks in close proximity²⁴ and even more specifically, having “zebra-stripped crosswalks” in the route to an open space or park.²⁵ Researchers have warned that too many intersections on the way to the park may cause fear among elders about pedestrian traffic accidents.²⁶



Figure 14: Wide, smooth walkway.

Credit: Dave Overcash

A study in the UK examining elders' ability to walk to the nearest open space found a major gap: "A third of the sample could not walk more than 10 yards (9 m), and only half could walk 100 yards (90 m); yet only one-third had a bus stop, one-quarter a local park, and one-third a local shop within this distance."²⁷ Elders in Hong Kong reported similar major issues in getting to/from a park mostly because of physical health barriers.²⁸

Psychological Needs

Choice is an important psychological need for elders. In fact, involving elders in the planning of open space, parks, and/or physical activity programs will help designers understand what motivates them, and how they negotiate any leisure constraints.²⁹ Allowing elders to give input and express their preferences may facilitate "buy in" and use of their choices for planning. More specifically, leisure service organizations should focus on elders' motivations and negotiation strategies before, during, and after implementing health programs.³⁰ Many elders face increasing leisure constraints because of health-related issues, so park planners would be wise to help them negotiate between their motivation to go to open spaces and their burgeoning constraints³¹ as well as between priorities and limited resources.^{32,33} One study in which elders were not asked for input found that "if you build it..." (i.e., a recreation facility), they will not necessarily come.³⁴

Surviving to an old age requires resilience. One way elders may maintain resilience is to cope with psychological needs by adapting to the environment. With age, the fear of falling likely becomes more pronounced as elders realize the difficulty of maintaining physical stability in open spaces.³⁵ Elders may, however, differ in their expectations as to whether the environment should accommodate their psychological fears of falling or they should adapt to the potential for environmental risks and be extremely cautious.³⁶

Choice and a sense of control compose part of elders' desire to be as independent as possible. In relation to open space, elders' priorities vary by subgroups. Among elders living alone, distance to the park was more important than other park features and facilities. Among elders with a disability, having seating opportunities en route to the park was the most important feature.³⁷ However, independence may not reflect reality as no one is completely independent of his/her context, including the elders.³⁸ Further, independence could result in isolation and may not reflect the diversity of elders' goals. Because of the risk of isolation, some elders may prefer "interdependence" wherein they live independently but somewhat depend on others for social interactions, rather than support or assistance.

Social Needs

Elders have indicated that open spaces and parks should not be just for physical exercise but may also be important social venues,^{39,40} even for elders with dementia.⁴¹ Indeed, social aspects of open space and park use may be more important to some elders than physical amenities.⁴² This preference may even be more intense in different seasons like winter. Elders have been found to perceive open spaces as gathering spaces, also referred to by some researchers as "third places" or



Figure 15: Playing piano in Washington Square Park, NYC. Credit: Christopher Kostrzak

“bumping places.”⁴³ One researcher referred to the social aspects of open spaces and parks as “natural neighborhood network.”⁴⁴ However, overcrowding or other social nuisances could interfere with elders’ tendency to spend more time observing nature.⁴⁵

Some elders may prefer to be with peers only, while others may want to be surrounded by other age groups as well. Thus, elders in a Montreal study preferred their own peer groups when at the park,⁴⁶ while elders in the Netherlands were interested in having “other people” (from other age groups) nearby.⁴⁷ Researchers have suggested adding paved trails and playgrounds as a way to increase physical activities as well as family and intergenerational activities.⁴⁸ Among ethnic elders in Chicago, Hispanic and Asian elders preferred to go to parks with larger social groups than Caucasian or African American elders.⁴⁹

Social interaction positively affects quality of life and life satisfaction.⁵⁰ Researchers have found significant positive effects of neighborhood open space on life satisfaction and suggested that social interaction may be one of several mechanisms explaining the relationship.⁵¹ But perceiving open spaces and parks as social venues affects more than the elders’ experience of pleasure and “sociality.” Elders who visited a park with a companion had better scores on physical health status, including self-reported health and body mass index.⁵²

Moore et al. (2010) explored how different types of social participation associated with park use. They categorized elders into one of four groups based on their formal or informal participation in social organizations or networks and their instrumental (e.g., being local leaders about community issues, etc.) or expressive orientation (e.g., having hobbies, belonging to religious organizations, etc.) in the social organizations or networks. In all, they found that elders who were engaged in expressive types of social organizations or networks used parks more than those who were not.⁵³

The biopsychosocial framework provides a way to examine the research literature on open spaces and parks in relation to elders' biological/physical, psychological, and social health needs. Open spaces and parks may be considered more than a supplement or adjunct of elders' homes to actual extensions of them. Further, such extension of home may facilitate the physical and mental well-being, even for frail elders. In fact, elders, themselves, often mentioned both their physical and mental/emotional health needs and preferences in relation to open space and parks as not just separate but interrelated dimensions of their health. However, open spaces and parks should also be designed in consideration of both the normal physical declines with age as well as concomitant physical and mental diseases and disabilities.

Marketing principles for any product do better with consumer input. Asking elders for their input about open space design provides them with a sense of choice and control that supports their general need to be independent or optimally interdependent. Honoring such needs treats elders with the respect and dignity that they desire and deserve. Perhaps less recognized in relation to physical and psychological health, consideration of social health should also play an important role in the

design of open spaces and parks for two reasons. First, elders' social aspects of their health can be both a draw to and benefit from open spaces and parks. Second, consideration of social well-being is a must, as elders face increasing risk of social isolation that can, sadly, be deadly.

A Person-Environment and Life Span Perspective on Elders' Needs for Physical Activity

The fourth principle related to the study of aging derives from two major theories: the "person-environment theory" and the "life span theory." The first identifies how individuals do not operate in a vacuum but constantly interact with their environment.⁵⁴ The notion of "environment" is broad and does not only refer to the natural (i.e. nature) but also the physical, cultural, and social environment. Ideally, individuals interact with their environment in a manner that sustains a natural balance relative to their needs and preferences.

Elders may become out of balance with their environment, if they experience isolation from needed resources. Public support is growing for the design of communities where, in contrast to more rural or suburban settings, a variety of residences for elders and non-elders exist around a town center.⁵⁵ Mixed-use communities may provide elders with more access to multiple resources, including open space for physical activity, and help keep them in balance. In fact, heterogeneity in land use positively associates with elders' use of parks.⁵⁶

As they age, elders risk additional wear and tear, which, in turn, makes them susceptible to becoming out of balance with the environment. With their own agency and self-direction, they may compensate for their

Figure 16: Maple Park

Credit: Liz Devietti



increasing biopsychosocial limitations by adapting to the demands of the environment. Adaptability, however, should go both ways: the environment should also be adapted to the elders' needs as they continue to change and develop.

Elders and their aging processes evoke continual change. This brings in the tenets of the life span theory, which purports that individuals continue to develop and change over their life span. These two theories represent ideal conceptual bases to examine the literature on elders' physical activity needs since physical activity operates as a potential mechanism for improving how elders interact with their environment as well as how they adapt over time, despite the ongoing challenges of living with multiple chronic diseases.

Physical Activity Needs

Although open spaces and parks may be enjoyed for passive recreation and relaxation, much of the literature examines park features associated with active use and/or physical activity. The most common type of physical activity among older adults, regardless of age and other sociodemographic attributes, is walking for exercise or transportation purposes.⁵⁷ The presence of walking paths or trails in a park or open space positively associates with older adults' physical activity.⁵⁸ Certain

open space and neighborhood features (e.g., safety, connectivity, etc.), associate with longer periods of walking among older adults, while noisy traffic leads to less walking.⁵⁹ Even the presence of opportunities for walking has positive associations with physical health. Researchers studying Japanese elders have noted a positive relationship between availability of “walkable” green spaces and longevity.⁶⁰ A survey investigating the link between walking on streets in Schiedam, Netherlands in relation to perceived attractiveness of a street found elders commenting on both the positive (e.g. vegetation and greenery) and negative (e.g. litter) aesthetics of streets.⁶¹

However, many elders do not have easy access to parks and open spaces, which limits the frequency of park use. Indeed, a major constraint to park use relates to the long distance of the park from the elders' homes,⁶² and the farther the distance the lower the physical activity of elders.⁶³ Thus, elderly women were most likely to engage in physical activity when they perceived themselves as being close to a park.⁶⁴ Among adults, including elders, who perceived a park as within walking distance, park use declined with increasing age.⁶⁵ In a study of adults 65 years or older, researchers classified respondents into “achievers” and “non-achievers” based on their self-reported frequency and intensity of physical activity. “Achievers” perceived themselves to be close to a park, felt safe, and perceived having companionship and social support.⁶⁶ The presence of paved trails promoted physical activity among a sample of adults that included elders, although they did not distinguish elders' from other adults' physical activity levels.⁶⁷

Researchers have also examined the impact of age on physical activity and park use. In a study examining the relationship between park use and physical activity, elders were less likely than other adults to visit

parks.⁶⁸ A different study found that older adults have the lowest levels of physical activity relative to other age groups.⁶⁹ Another study focusing only on park use in relation to age found bimodal results among elders compared to younger adults: the elders had the highest rates of the lowest and highest use.⁷⁰ However, the results were descriptive with no tests for statistically significant differences, so these trends may be due to chance alone.

A different study examined variables that may explain variations in the frequency and duration of physical activity among older adults. One of the main findings noted that age and gender affect overall participation in physical activity as well as its frequency and duration.⁷¹ However, some of the results contrasted with those of previous findings, indicating that other factors (e.g. race/ethnicity, social support, personal traits etc.) may also be at play. More indirectly, some have suggested that park use may associate with physical activity. One study noted that older females tend to use parks less, thus implying that older females may also need special attention.⁷²

Information also emerges about the preferences for physical activity among older adults in parks. One large study including various age groups found four groups of users: active health-oriented (i.e., activity-focused such as strolling or sports), active socially-oriented (i.e., focused on family activities), passive local (i.e., not focused on any particular activity and preferred local parks), and moderate (i.e., average overall in terms of preferred park location, features, and activities and needed public transportation)⁷³ and suggested unique needs (i.e., health, socializing, or relaxation) that may motivate elders. Park use among elders varies by ethnicity, with some groups preferring to use parks that had a social milieu and others using certain park facilities more than others.⁷⁴ These findings point to the inherent diversity of elders in terms of their preference for park use and physical activity.



Figure 17: Senior sport zone by Lappset.

Credit: Lappset

Specifically in relation to physical activity programming, one study recommended more attention to ethnic minority issues and diverse activity programs for elders.⁷⁵ Physical activity programs could even help increase awareness of parks and open spaces among ethnic minority elders.^{76,77} Diversity among elders extends beyond age, gender, and ethnicity to level of disability. For elders with functional limitations, the presence of walking areas, handicapped parking, and public transportation affect physical activity.⁷⁸ Finally, diversity among elders also pertains to their socioeconomic status, including their education levels. Thus, a study on the relationship between socioeconomic status and physical activity among individuals in general, found that elders with lower educational levels may need more information about the benefits of physical activity, and more effort is needed to bolster their self-efficacy in physical activity.⁷⁹

Conclusion

In all, examining the research on physical activity and elders in the context of open spaces and parks from a “person-environment” perspective and life span theory suggests several points for further consideration. First, walking is the most common physical activity for elders in relation to open spaces; both in the park and also to reach the park. Second, distance to parks affects the elders’ use. Third, compared to other age groups, evidence suggests lower physical activity levels.

Fourth, demographic characteristics of elders associate with physical activity and park use in varied ways suggesting a diversity of motivation to engage in physical activity and park use. The last two points indicate the diversity of ways that agency and self-direction among elders affect their use of open spaces and parks. Fifth, the existing dearth of physical activity and other park programs may serve to draw elders to open spaces and parks, but these programs need to cater to their diverse needs and preferences. The impending need for more programming may indicate a general misunderstanding about how programs may facilitate the continued development and sustenance of elders' health and well-being. Planners and landscape architects should take into consideration the above points in designing parks. Further, programming for elders in open spaces and parks may serve more than just a source of physical activity but also as a multi-dimensional, contextual mechanism for health promotion and disease prevention.

In conclusion, the scientific literature on elders' need for and use of parks and open space suggests nuances that are unique to the aging population but not incompatible with younger age groups. Urban planners, landscape architects and policy makers do not need to explicitly create parks and open spaces for elders, but, rather, seek elders' participation with them, given their inherent geographical, demographic, and health diversity. For all age groups, health pertains to biological, psychological, and social factors, but elders, in particular, face higher risks for declining health. Thus, parks and open spaces provide much more for elders than just sources of recreation; they provide a means to improve and/or sustain their health and well-being.

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Credit: Susan NYC

CHAPTER 3

AGENCY

PERSPECTIVES



Figure 18: Older adults enjoying open space. Credit: Benjamin Bertsch

Interview Overview

To better understand the current policy initiatives and open space needs of older adults, we conducted interviews with representatives from local, state, and federal agencies focusing on issues related to aging or open space. More specifically, we interviewed nine individuals representing the following organizations:

- Los Angeles Jewish Home
- ONEgeneration Adult and Child Daycare Facility
- Los Angeles Neighborhood Land Trust
- Philadelphia Corporation for Aging
- California Department of Parks and Recreation (CDPR)
- National Park Service (NPS)
- Environmental Protection Agency's (EPA) Aging Initiative
- Administration for Community Living (ACL)
- American Association of Retired Persons (AARP)

These interviews shed light on the elders' needs regarding open space and physical activity, changes in such needs over time, type of open space initiatives or programming currently offered by these organizations, and emerging challenges.



Figure 19:
Intergenerational
interaction.

Credit: Collied

Elders' Open Space Needs

In general, the elders' needs for open space amenities parallel those of the general public with some additional considerations. According to Jeff Brown, Senior Landscape Architect, California Department of Recreation and Parks:

"Seniors are looking for some of the same things that everyone wants – safe places, places that offer opportunities for contemplation, and open space where they can play with the grandkids...They may stay away from loud musical events but still desire and should be offered the same experience [as the general public] within their capabilities."

His department touts "universal access" as paramount – the approach of creating places that encourage access and are purposely designed to appeal to all users.

Kathy Sykes, Senior Advisor on Aging and Sustainability, Environmental Protection Agency, explains that the physiology of aging generates unique needs:

"As we age we have a loss of mobility and our motor system slows down; vision isn't great as it was before. Thus, parks need to have good signage with large fonts to help way-finding; they should not have colors with little contrast. If there is a crosswalk nearby, the countdown should be visible, and there should be both visual and audible crosswalk signaling."

Indeed, EPA's Aging Initiative stresses that accessibility to open spaces is vital for older adults. Enhancing accessibility for elders should include

Figure 20: Benches in park.

Credit: Flickr user red_Rock_moon



making the trip to and from the park easy for them. In addition, planners should consider how the various design elements and programs offered at the park can be better accessible to them, such as having restrooms and drinking fountains easily available and accessible in the park.¹

Thus, parks, in addition to good signage, should also have “wheelchair accessibility, lighting at night, umbrellas, appropriate walking paths”² and “more frequent rest stops, more shaded areas, [less steep] sloping trails [and] less strenuous trails to accommodate those with less strength.”³ Additionally, park placement should be carefully considered in relation to other facilities often used by seniors, such as churches and community centers. As Katie Hirning, California State AARP Director, notes:

“Parks are critical in how they associate with other spaces or facilities used by seniors. For example, churches are very important for the African-American and Latino communities. A church may use the park to host an event, if the park has a center for seniors. Libraries are also critically important for senior citizen gathering. There needs to be a synergy between parks, churches, libraries, and senior citizen centers.”

According to Mike Kim, Project Manager, Los Angeles Neighborhood Land Trust – a nonprofit that creates parks in Los Angeles – senior groups tend to request two things:



Figure 21: Clear pathway in MacArthur Park.

Credit: Liz Devietti

“Space where they can find respite (i.e., sit and feel safe enough to people-watch or daydream), and spaces that allow senior-friendly physical activity programs.”

He notes that “many times the older adults will advocate for a separate section or space from the general population...and will ask for barriers or edges that separate their space from the children's play areas.” A number of interviewees made clear that the need for safety is more pronounced among senior park users, who also value spaces with good visibility.⁴ As Kathy Sykes emphasizes, senior people, in particular, can be discouraged if they feel unsafe. She recommends addressing these fears by keeping the outdoor setting well maintained and having “many eyes on the park.” An additional worry that is more pronounced for elders is the possibility of tripping and falling. They need open spaces and paths that they can navigate easily and safely.⁵

On a broader scale, the concept of livable communities, the main focus of the Administration for Community Living, promotes the idea of more age- and senior-friendly spaces. According to David Ishida, Regional Administrator, Administration on Community Living:

“Livable communities should have areas where people can congregate and areas where they can sit, rest, and reflect. There should also be spaces where older individuals have the opportunity for socialization.”

Figure 22: Private seating area in Denver Botanical Gardens.

Credit: Cindy Hasler



The overall consensus that emerged from our interviews was that parks should not be considered as isolated, individual spaces but as integral parts of a larger interconnected community that enables all users to have similar levels of access and benefit.

Elders' Physical Activity Needs

Open spaces provide settings for both passive and active recreation. Older adults need to remain active as they age and require spaces that accommodate their limitations in mobility and strength. Thus, the AARP views parks as providing “a much needed place for older adults to support exercise, vitality and health.”⁶ As stressed by Mike Kim from the Los Angeles Neighborhood Land Trust, “providing areas where seniors can get active requires creating spaces that allow senior-friendly physical activity programs.” According to Sykes, this includes open spaces with “multiple ways for people to be involved with multiple activities, such as gardening and even watching others, which can inspire activity.” Parks with gym equipment provide the opportunity for exercise and the incorporation of low impact equipment like stationary bicycles and elliptical machines that allow older adults to participate.⁷ However, while all interviewees acknowledged the importance of open spaces as settings for physical activity for older adults, they were mostly not aware of particular senior-oriented physical activity programs regularly taking place in U.S. parks.



Figure 23: Calisthenics in Shanghai, China. Credit: David Moss

Senior-Specific Programs

Recognizing and understanding the needs of older adults allows for better implementation of programming targeting this specific group. We asked each of the interviewees to discuss any specific open space and/or physical activity programs they offer for seniors.

LA Jewish Home offers extensive in-resident housing and programming for seniors. With a large female, Jewish population of an average age of 93, LA Jewish Home serves a specific niche of the senior population. They provide a wealth of activities for their residents such as physical activity programs six days per week that include yoga, tai chi and social dancing.⁸ Additionally, their nine-acre campus features numerous existing parks and open spaces with facilities for seniors to sit and relax or be active along walking trails.

ONEgeneration, an adult daycare and childcare facility, joins seniors and children together in activities that enrich multiple generations.⁹ Elders can take advantage of services such as at-home care management and daytime activities in the senior enrichment center.¹⁰ While ONEgeneration does not have specific park programming, it encourages elders to be physically active through a wide array of exercise and dance classes

Figure 24: Old Timer's Brunch at Longmire Community Building in Mt. Rainier National Park.

Credit: National Park Service, Kevin Bacher



and to become socially connected through discussion and support groups.¹¹ The California Department of Parks and Recreation focuses on implementing universal design at their parks. The Department does not pursue outreach or programming geared specifically toward older adults. Despite this lack of specific focus on the older population, a comment from the 2004 Performance and Management Report serves as an example of how the organization may take action on visitor feedback to help create open spaces that can be enjoyed by all:¹²

"Trail improvement (Sea Lion Point Trail) was very well done. My mom is 91, she could take the trail now that it's smoother. Also appreciate benches for elderly!!" Point Lobos State Reserve, Winter 2000

Similarly, the National Park Service (NPS) does not specifically market its parks to seniors. Through some outreach programs, however, they may send a ranger to a senior citizen center to talk about programs offered at their parks.¹³ This can be a beneficial option for those unable to get to the parks for health, mobility or medical reasons. In order to better serve the needs of those who do visit their parks, the National Park Service collects statistical information about different age groups, including seniors, to watch for trends in attendance over time. In doing so, they better understand park attendees and can accommodate their needs by training their staff accordingly. Nevertheless, so far, NPS does not have specific marketing or outreach campaigns for seniors.

Figure 25:
Uncomfortable park
bench in Death Valley
National Park.

Credit: Jill Hayes



In terms of design, Ray Bloomer, Director of Education and Technical Assistance at the National Park Service, described how his agency is now “starting to have a higher percentage of benches with high backs and arm rests to make seating at the park easier for those with hip or knee replacements.”

EPA's Aging Initiative disseminates information and seeks to create collaborative partnerships that inform communities on how to develop spaces that promote health. One example is the publication *Growing Smarter, Living Healthier*,¹⁴ that they have disseminated widely to stakeholders (i.e., government officials, senior-specific organizations like the AARP, NGO's focused on minority populations, the Center for Disease Control, and elected other officials).

In addition to this guidebook, the EPA initiated the Building Healthy Communities for Active Aging program, which rewards communities that demonstrate the incorporation of smart growth and active aging approaches at the local, county, regional, or state levels.¹⁵ An example of this awards program in action is in Brazos Valley, Texas. In combined efforts, the City of College Station and the Brazos Valley Council of Governments outfitted parks with outdoor strength training equipment. Moreover, the Texas Senior Games took place in Brazos Valley in 2014 and will take place again in February 2015.¹⁶

The Administration for Community Living (ACL) is part of the U.S. Department of Health and Human Services and supports programs for seniors, disabled individuals, and family caregivers by directing funding exclusively for these groups. The Administration on Aging (AoA) is the main senior-specific unit within ACL. While AoA does not design or provide open spaces, one of its initiatives – the Community Innovations for Aging in Place Projects (CIAIP) – illustrates ACL's concern for seniors' access to public space.¹⁷ The purpose of CIAIP is to identify barriers to independence and aging in place and to provide innovative strategies to combat such barriers. Outlets for socialization and recreation are two things that Aging in Place projects specifically list as priorities for seniors, both of which can be realized in open spaces.

While the AARP does not have any particular program focusing exclusively on parks,¹⁸ it offers national park discounts to older adults, which encourages able individuals to frequent these facilities more regularly. Additionally, AARP donated \$235,000 towards the construction of Sunrise, an affordable housing project in Charlottesville, VA (built by Habitat for the Humanity), which transformed a 16-unit trailer park into a variety of duplex houses, single family homes and apartments.¹⁹ At the center of this development is a "large, communal 'backyard' space of 50,000 square feet...to promote socializing, play and community

Figure 26: Communal backyard in housing complex. Credit: Habitat for Humanity





Figure 27: Brazos Valley Senior Games. Credit: City of College Station, TX

activities.” Nine of the sixteen families that moved to the new apartments lived previously in mobile homes, and eight of the nine have family members over the age of 65.²⁰

The Philadelphia Corporation for Aging (PCA), a non-profit organization, focuses on improving “the quality of life for older Philadelphians or people with disabilities and [assists] them in achieving their maximum levels of health, independence and productivity.”²¹ For example, the Senior Strut – a mile-long social walk through Fairmount Park for individuals 60 years of age or older illustrates the organization's approach to improving not only the physical health but also the social health of Philadelphians. Philadelphia's Mummies, a group of endeared entertainers and musicians, lead the Strut.²² Participants of the Senior Strut receive a free t-shirt and pedometer along with the opportunity to receive health screenings and participate in other activities.²³ With over 400 participants in 2013, Planner for Policy and Program Development and Chair, Kate Clark states that the Senior Strut is the most well-received and most highly anticipated annual PCA event.²⁴

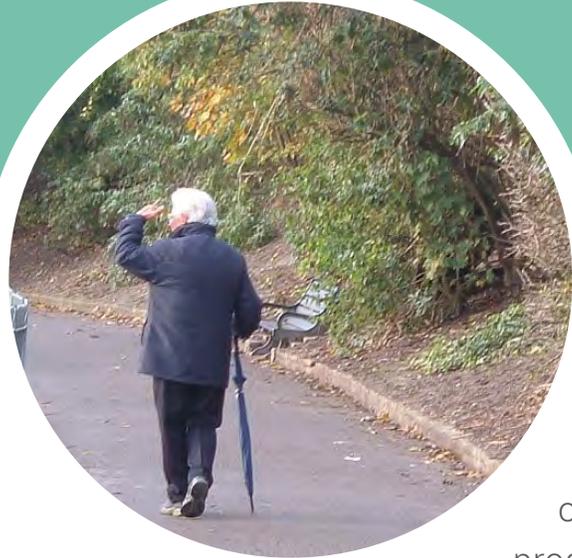


Figure 28: Senior enjoying a stroll through Brighton Queens Park.

Credit: Elsie Esq.

Times Are Changing

With a growing aging population, local and national organizations must respond to the changing needs of older adults through awareness and enhanced programming. However, this concern has not necessarily translated in developing senior-friendly parks. According to Katie Hirning of the AARP: "People [are living] longer and want to be more active. [There] is a growing population that we need to accommodate." She notes that:

"AARP's approach has changed a lot. We used to primarily focus on issues of social security and address a population that was mostly retired. We are now focusing on the boomer generation; many are still working. People live longer, want to be more active."

She admits, however, that the AARP has not had any particular initiative related to parks.

The increase in the number of elders is particularly felt by organizations such as LA Jewish Home that went from serving 1,000 residents at their facility a few years ago to serving "2,500-3,000 in-house including people in the community" presently.²⁵ This change is not only felt by senior-specific organizations. According to Jeff Brown from the California Department of Parks and Recreation:

"In the last decade or so, the urban interface has changed. We are dramatically thinking outside of rustic parks and transitioning into urban spaces."

As a result, planners should take serious consideration of the location, surrounding development and space available for parks, as well as focus



Figure 29: Wide walkways needed for seniors.

Credit: Dave Overcash

on the nestling of parks into the urban landscape. And as underlined by Mike Kim from the Los Angeles Neighborhood Land Trust:

"As times change and the interests of the next generation of the senior population change, [the] programs and resources [must change as well]."

Challenges

Agencies and nonprofits serving older adults face also challenges and limitations. EPA's Aging Initiative's main challenge encompasses what many organizations encounter when trying to cater to senior populations, namely "determining what makes a community sustainable and livable for all ages."²⁶ The National Park Service experiences this firsthand in realizing that "the biggest unmet need is the awareness of what the needs are. [There is a] lack of consideration toward what older populations need."²⁷ Although not purposeful neglect, the lack of awareness points to a gap in how vital senior-specific design and programming is for the creation of an age-integrated nation. But as Mike Kim from the Los Angeles Neighborhood Land Trust notes:

"We aren't asking the right questions. Parks are multi-faceted and can be enjoyed by all, but amenities at parks should cater to specific groups."

Kathy Sykes from AARP sees the challenge not so much in not understanding the needs, but, rather, in recognizing that “we now have a growing population to accommodate.” She also noted the drop in the resources for EPA’s Aging Initiative is occurring at the same time as the numbers of seniors are increasing and will continue to increase. Consequently, an overall lack of evaluation of different programs and initiatives for seniors exists and results in fewer opportunities to create parks relevant to older adults. As David Ishida explains:

“In urban and suburban areas that are more highly populated, there are generally more people than there are parks to accommodate them... there is less space for people to get out into open space.”

Another challenge in addressing the seniors’ open space needs relates to their heterogeneity as a group. As explained by Katie Hirning, “It is not an average person that is a senior citizen; people have different needs because of age, culture, income. For example, Filipino seniors want to go to public places to dance; Latino seniors may go to the park with their families. It depends on the culture.” Culture is something that always comes into play in the design process,” admits Mike Kim, but “how people age in different cultures is something that we have not had too much experience about...Cultural diversity might come up in discussions that we have [with communities] around planting and gardens or even site amenities.”

Conclusion

Senior-specific open space facilities and programming is a burgeoning issue based on these interviews with local, state and national agencies. All interviewees spoke candidly about both the need for universal design in open spaces but also for the importance of responding to seniors’ specific concerns and needs. The interviews also supported our anecdotal evidence that, while many of these agencies have impressive initiatives that focus on senior citizen living and health, the United States lags behind other advanced nations in terms of planning, designing, and programming open spaces for seniors.

Endnotes

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3. Ray Bloomer, Director of Education and Technical Assistance, National Park Service, January 17, 2014, interview.
4. Mike Kim, Project Manager, Los Angeles Neighborhood Land Trust, February 12, 2014, interview.
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23. Ibid.
24. Kate Clark, Planner for Policy and Program Development and Chair, Philadelphia Corporation for Aging, April 10, 2014, interview.
25. Roisman, interview.
26. Sykes, interview.
27. Bloomer, interview.



Credit: Karen Blumberg

CHAPTER 4

CASE STUDIES OF

SENIOR-FRIENDLY

PARKS



Figure 30: Elders playing. Credit: Lou McGill

Case Study Overview

As referenced previously in this report, “seniors” and “parks” are two terms not often used together. Nevertheless, as more communities recognize the importance of providing outdoor recreational space for older adults, parks for seniors are gaining in recognition and use.¹ Physical activity benefits all individuals regardless of age; it is particularly important for older adults to help prevent muscular atrophy. Parks and open spaces not only offer opportunities for exercise but may also promote overall well-being, as they offer settings for socializing, relaxation, and recreation.

The growing population of older adults in cities requires designing and programming open spaces to address their needs. In the last decade, a number of countries around the world have started developing open spaces to address their senior citizens’ needs for open space recreation and physical exercise. Still, examples of open spaces that have been created specifically for seniors remain limited. This chapter presents examples of domestic and international open spaces from North America, Europe, and Asia that cater specifically to the senior population through senior-friendly infrastructure and programming.



Figure 31: Miami Fitness Zone. Credit: Trust for Public Land

NORTH AMERICA

USA

Generally, in the U.S., few public open spaces exist for seniors. Retirement communities have funded community-private open space projects, and some senior citizen centers also include open space within their property.² It is only recently that a few cities have started offering programs and activities for seniors in some of their parks.

Florida

The Free Active Adults Program offered at 14 Miami-Dade park locations provides a means for seniors in Miami-Dade to get active. Examples of activities provided are tennis, yoga, walking groups and dancing.³ Currently, 16 parks are outfitted with “Fitness Zones,” and 7 parks have plans for future development of such zones.⁴ Fitness Zones are areas of a park with permanently installed outdoor exercise equipment. The universally-designed equipment allows all ages of Miami-Dade residents the opportunity to include fitness into their daily routines.⁵

Figure 32: Senior workout in John Jay Park, NYC.

Credit: Amy Zimmer



New York

The NYC Department of Parks & Recreation offers a number of opportunities for seniors to get active in outdoor facilities. The organizations Events Calendar offers updated information about a wide range of activities such as low-impact chair aerobics, chair yoga, and Rock Your Seat, where seniors work out to the beat without leaving their seats.⁶

Staten Island's Walker Park offers sweat therapy, a strengthening and conditioning class that "elevate[s] the heart rate, build[s] muscle, increase[s] flexibility, and burn[s] fat."⁷ Also, multiple parks across the different boroughs, such as Canarsie Park in Brooklyn and Cunningham Park in Queens, offer Walk NYC, a free program that encourages New Yorkers of all ages to get fit while enjoying the outdoors.⁸ Some have even touted a formerly underutilized corner of John Jay Park in Manhattan as the first seniors' park in the U.S. It provides open space for fitness classes like yoga, a stationary bike, a core trainer, a tai-chi-like machine, exercise mats, and chess tables all for senior use.⁹ Another park, Macombs Dam Park in the Bronx, has fifteen pieces of adult exercise equipment.¹⁰



Figure 33:
Exercise station at
Springfield Lake,
Ohio.

Credit: Ed Suba Jr.

Also in New York, the nonprofit CityParks Foundation, has programs in 14 parks throughout all five New York City boroughs offering free tennis lessons, yoga instruction, and fitness walking. The programs are free of charge for all individuals over 60.¹¹

Ohio

In 2011, the Springfield Township in Ohio installed eight pieces of exercise equipment at a new park for seniors. Seniors, who used to visit this park to play cards, now have another option for park activity.¹² Bobby Dinkins, director of the Boyd Esler Senior and Community Center in Springfield Township, developed the idea. Dinkins knew of parks for seniors in the UK, Finland, Germany, and Asia and wanted to implement them in his town. He secured \$33,500 in Community Development Block Grant funds for the building of the park.¹³

Oregon

The Portland Memory Garden, created in 2002, serves the needs of those with memory disorders and their caregivers.¹⁴ The park offers places to simply sit and enjoy as well as a smooth, walking pathway that has landmarks to assist with way-finding.¹⁵ The plants in the garden were uniquely chosen to provide sensory stimulations through seeing, smelling, feeling, tasting and hearing.¹⁶

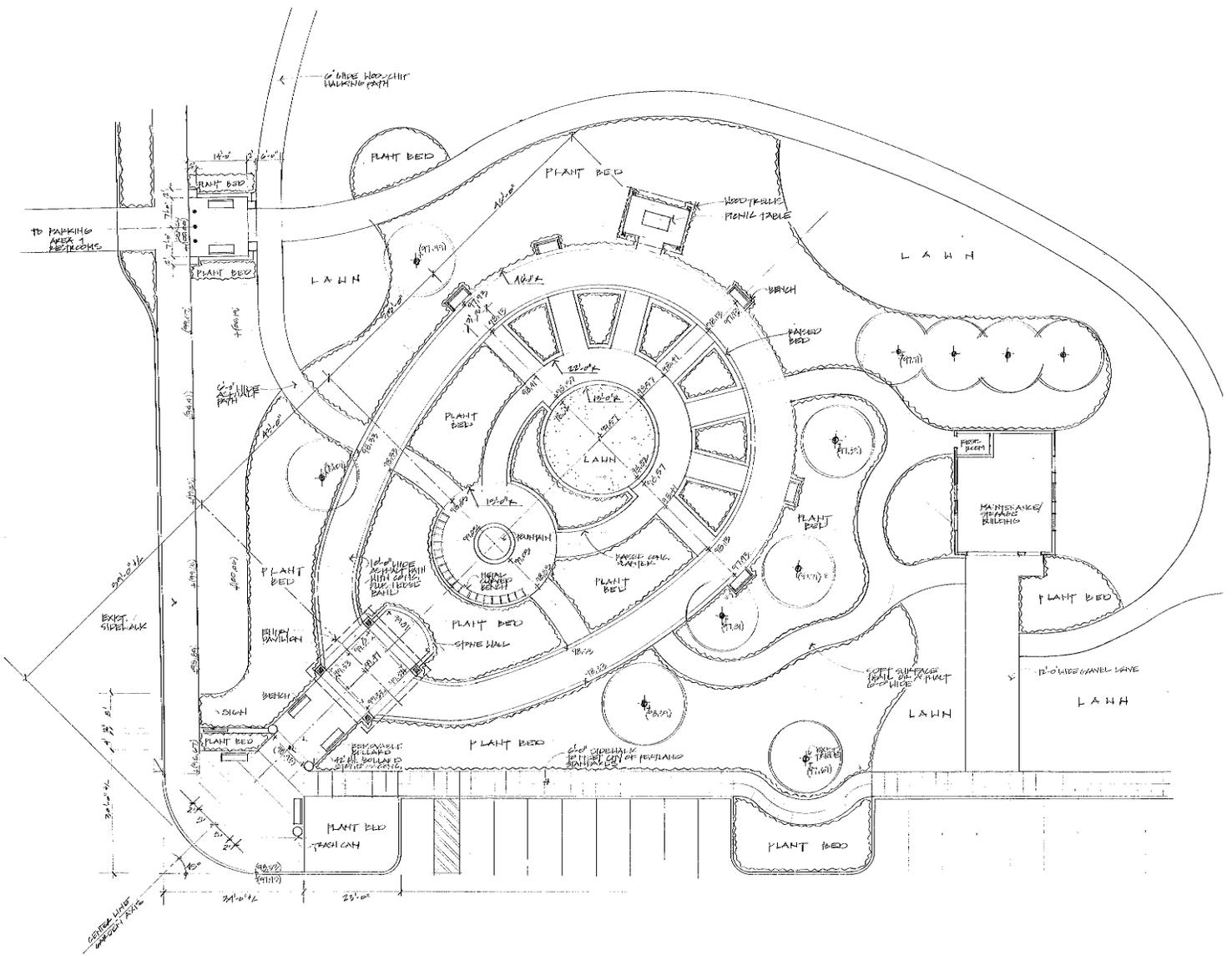


Figure 34: Plan view of Portland Memory Garden. Credit: Brian Bainson Quatrefoil



Figure 35: Seating area in Portland Memory Garden.

Credit: Oregon Live

Multi-Generational Playgrounds by KaBOOM

While senior-only parks remain sparse in the U.S., the idea of creating multi-generational parks rests on fertile ground. Thus, the Humana Foundation has partnered with KaBOOM, a nonprofit that builds playgrounds in low-income communities, with the goal to build 50 multi-generational playgrounds in different communities around the country.

Multi-generational parks incorporate walking paths and fitness stations for adults and senior citizens along with more traditional play equipment for the young.¹⁷ KaBOOM's multi-generational parks' focus provides a way for adults to be active while keeping an eye on their children or grandchildren.¹⁸

Canada

Cumberland Seniors Park in Ottawa opened in 2009 as Canada's first open space fully dedicated to serving the needs of senior citizens.¹⁹ The park includes game tables, pathways, a waterfall and life-sized chessboard and chess pieces²⁰ along with an open area where older adults can play games like petanque and bocce ball.²¹

Figure 36: Children and seniors mingle at intergenerational playground opening. Credit: Humana





Figure 37: Cumberland Seniors Park, Ottawa. Credit: Dale Biore.

New Lions Wellness Park in Tsawwassen, British Columbia opened in 2007 with specifically designed exercise equipment “aimed at getting older people physically fit.”²² It offers 15 exercise stations, several community gardens, and a walking path. The upgraded Windskill Park also includes the Lions Wellness Park. Park design aims to encourage parents and older adults to exercise while they watch their children and grandchildren play.²³



Figure 38: Playground equipment for seniors, Lions Wellness Park.

Credit: Habitat Systems

EUROPE

A number of parks for seniors have appeared in Europe. Many credit the genesis of these facilities to studies at the University of Lapland, Finland in the mid-2000, that showed the positive impacts of three-generational play. These studies revealed that older people's three-month exercise and regular participation at a prototype open-space activity area helped them build muscle, reduce fat and improve their coordination and balance.²⁴

Among the European countries, Finland, Great Britain, Germany, and Spain have all proceeded to develop parks with activity programs or facilities for seniors in the last decade.

Finland

The Finnish playground manufacturer, Lappset, further supported the concept of seniors' active recreation and three-generational play. The company's playgrounds now incorporate play equipment for all ages, under the philosophy that making the playground a cross-generational meeting place will encourage parents and grandparents to become more active but also to facilitate cross-generational interaction and understanding.²⁵

Great Britain

In 2009, landscape architects converted a section of London's Hyde Park into a "playground for seniors." This includes six pieces of exercise equipment that have been especially selected to ensure high levels of accessibility by seniors and to help them improve core strength,

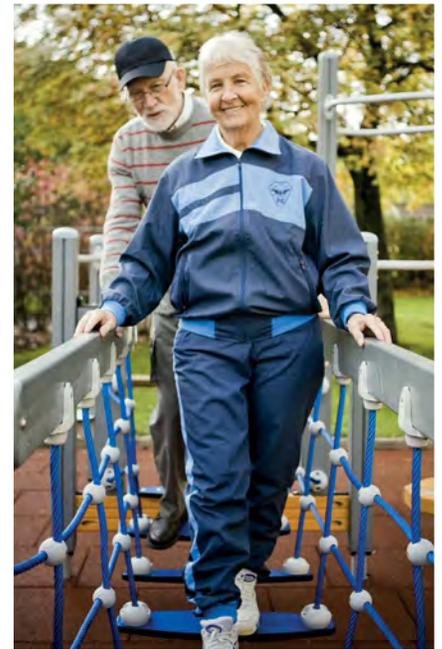


Figure 39: Senior using Lappset playground equipment.

Credit: Lappset



Figure 40: Hyde Park Senior Playground, London. Credit: Anne Mare Briscoombe

flexibility and balance.²⁶ Prior to the installation of the playground, London's Landscape Agency undertook extensive research of the type of available equipment, signage, and marketing strategies that were most appropriate for the attraction and enjoyment of older adults.²⁷ Younger visitors can also use the equipment; however youth under the age of 15 are not allowed to use it.

The area of Blackley in Manchester also has, since 2008, an open space geared towards older adults at Dam Head Park. Its main purpose is to increase the opportunities for socializing among seniors.²⁸ Local residents chose its location to be specifically placed next to an existing play area for children.²⁹ The residents also chose 6 pieces of low-impact outdoor exercise equipment, which provide a range of exercise options (skate, ski, and press machines, stations for pull-ups, push-ups and pedaling).³⁰ The resident association built the playground, which cost about \$22,500.³¹



Figure 41: Seniors playground area, Hyde Park. Credit: The Landscape Agency

Also in 2008, planners test-fitted two public green spaces in Hampton London, Healthfield Recreation Ground and Whitton and Hampton Common, with a range of outdoor fitness equipment for use by all age groups.³² Follow-up evaluation noted that, in fact, a cross section of persons of various ages from the community utilized the equipment at both park facilities.³³ Similarly, observations suggest the popularity and frequency of use of seniors' open spaces at Hyde Park and Dam Head Park.³⁴



Figure 42:
Equipment in
Preussen Park,
Berlin.

Credit: Playfit

Germany

Opened in 2007, Berlin's Preussen Park represents the first of its kind in Germany. Preussen Park caters strictly to older adults and encourages them to exercise, including eight low-impact exercise machines (flexibility machines, leg trainer and back-massage machines).³⁵ These machines allow elders the opportunity for isometric exercises that help their stamina and balance.³⁶ Interestingly, no benches exist in this park for the fear that they may attract youngsters hanging out and taking over the seniors' playground. Indeed, adults under 65 are not allowed to use the equipment.

Another German city, Nuremberg, has also developed parks for its elders. They accommodate activities such as bocce and bowling, and include a giant chess set and exercise equipment. These German playgrounds pertain exclusively to seniors. Indeed, users under 65 years may not use their equipment. According to Nuremberg's Deputy Mayor Horst Förther, the seniors' playgrounds provide meaningful places "where the senior generation can find a refuge from younger people...We agreed that it was a good idea, given our demographic changes."³⁷



Figure 43: Parque biosaludable, Madrid Spain. Credit: Granada iMedia

Spain

Among all the European countries, Spain has planned and constructed the largest number of parks for its senior citizens. Called “geriatric parks,” these spaces have been designed and planned by municipal governments within mostly existing parks. They are primarily, though not exclusively, designed with seniors in mind to help promote their physical activity.

From 2010 to 2012, 30 geriatric parks expanded to the provinces of Galicia, Coruña, Lugo, Ourense and Pontevedras.³⁸ The exercise equipment at these parks targets strengthening muscles, aerobic fitness, coordination, joint mobility and flexibility and relaxation.³⁹

Figure 44: Parque biosaludable, Oviedo, Spain.

Credit: Izquierda Xunida



The province of Málaga, Spain is home to 32 geriatric parks with a total of 235 pieces of exercise equipment.⁴⁰ Out of the 100 municipalities in Málaga, 17 have geriatric parks.⁴¹ In addition to the geriatric parks, Málaga also has fitness machines located at promenades, such as rowing machines present at the western and eastern ends of Paseo Marítimo.⁴² This is a prime example of how countries like Spain are increasingly concerned about the health of their citizens and allocating resources to promote physical activity.

In 2007, the municipality Velez-Rubio created “Elder Park,” also known as “Geriatric Park.”⁴³ Designed to enhance coordination, balance, mobility and strength, the park affords seven pieces of exercise equipment, such as a set of pedals, stairs and ramps, and turntables.⁴⁴

Vilassar, a small Spanish coastal town, houses a park for seniors that allows seniors to practice on balance beams and elevated walkways along with stretching muscles and building endurance.⁴⁵



Figure 45: Senior Fitness equipment, Beijing, China.

Credit: Mark Dintenfass

ASIA

China

China stands out as one of the first countries to promote activities for senior citizens at its public parks. In 1995, the “Physical Health Law of the People’s Republic of China” along with the “Outline of Nationwide Physical Fitness Program” spurred the creation of numerous outdoor fitness centers in urban public parks with more than 4,000 outdoor gyms in Beijing since 1998.⁴⁶ The 2008 Olympics in Beijing fueled the construction of more outdoor exercise equipment for public use.⁴⁷



Figure 46: Senior fitness equipment, Beijing, China.

Credit: Edward Schonsett

Figure 47: Fitness equipment, Tokyo, Japan.

Credit: Ping Magazine



Japan

Tokyo originated “nursing care prevention parks” in 2004, which have become hugely popular ever since. As part of a new nursing care insurance law enacted in 2000, nursing care prevention parks aim to keep the older adults fit and healthy. Low-impact outdoor fitness equipment helps seniors maintain flexibility and agility.⁴⁸ Local parks offer workout classes funded by local governments. Seniors “swing around on a specially designed climbing frame, walk down balance beams and stretch their muscles on poles under the watchful eyes of trainers.”⁴⁹ The seniors enjoy not only the physical exercise but also the company of fellow participants. Participants state that they take the classes “to remain fit and independent – and out of hospitals or nursing homes.”⁵⁰ In addition to the exercise equipment designed specifically for seniors, local governments fund physical education and equipment training classes in the parks.

Singapore

Singapore has an extensive national park system with numerous activities geared toward seniors. From nature walks to community gardening at multiple park locations, seniors have plenty of reasons to



Figure 48: Walkway in Admiralty Park, Singapore.

Credit: Charlie Kwan

get up and about. Many parks also have exercise equipment, walking trails and foot reflexology paths. Additionally, parks offer several group classes such as tai chi, yoga, wu shu and sword exercises.⁵¹

Conclusion

The open spaces described previously have the common goal to serve the needs of seniors for outdoor recreation, physical activity, and socializing. Most commonly, planners retrofit an existing park with exercise equipment for seniors and arrange equipment in a cluster. Some places offer pieces of exercise apparatus for different skill levels.

Perhaps because the emphasis in many of these spaces is on fitness and exercise or possibly for cost saving purposes, their design comes across as more utilitarian than aesthetic and lacks landscape distinctiveness. That is, they are designed more as playgrounds for active recreation rather than as gardens for aesthetic enjoyment, except for the carefully designed and landscaped Portland Memory Garden.

Some places focus exclusively on fitness and exercise, while others also incorporate play with facilities for chess, bocce or other games. Planners sometimes create spaces only for seniors (like those in Germany). Other



Figure 49: Exercise machines focus on recreation rather than aesthetics. Credit: Aashoo Tandom

outdoor recreation areas and exercise equipment allow for interactive and intergenerational use, while still other have separate but side-by-side equipment and facilities for seniors and non-seniors. Lastly, some of these spaces also host organized outdoor programs for seniors, with classes in yoga, tai chi, aerobics, and dance, as well as training on how to use their equipment. In a few cases (such as in Japan and in some geriatric parks in Spain), professional trainers and physical therapists offer these classes.

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Credit: Suzanne

CHAPTER 5 SENIORS' NEEDS & ASPIRATION FOR OPEN SPACE



Figure 50: Plummer Park, West Hollywood, CA. Credit: Liz Devietti

Focus Groups Overview

Asking elders about their needs and preferences for designing an open space or park is rare. Thus, it is not surprising to find open spaces and parks that do not meet their needs. To explore and understand elders' needs and preferences relevant to designing open spaces and parks, elders, family caregivers and staff at St. Barnabas Senior Services (SBSS) participated in eight sessions of focus groups from December 2013 to March 2014. The focus group questions and resulting discussion revolved around the elders' needs for open space and physical activity as well as preferred park designs, amenities and programs.

SBSS is located in the Westlake neighborhood, a couple of miles west of downtown Los Angeles. For over 100 years, SBSS has served a multi-ethnic, low-income, and densely populated area in Los Angeles, which includes Chinatown, Koreatown, Filipinotown, and a major Hispanic population around the greater MacArthur Park/Westlake area. The Center's typical participants are in their mid-70s, live alone, depend on social security of about \$800 monthly, have limited support networks, and speak minimal English. Nearly all of the focus group participants

live at or below the federal poverty line and have scarce resources to meet their needs for food, medical care, and housing. SBSS provides a continuum of nutrition, social, and allied health services to a very diverse group of elders.¹

Reflecting the demographic characteristics of the neighborhoods around SBSS, the majority of focus group participants were Latino(a), Korean, or Filipino. Two additional focus group sessions were with SBSS staff members, and one session was with family caregivers of elders living with physical disabilities and/or cognitive impairment who participated in the adult day health care center. Details about the focus groups (participant characteristics and methods of analysis) appear in Appendix C.

Elders' Perspectives

For the people using SBSS, open space is an unfamiliar concept because of very limited access. For example, elders described parking lots, driveways, and even balconies as open space. Despite this limited notion of open space, they had consensus about their ideal open spaces: peaceful and relaxing scenery. One Caucasian female elaborated, "Open space in my mind should have sunshine, breeze, greens, trees, flowers, and sky. So I want to spend time and have a walk there." In reality, their experiences were far from ideal. To compensate, some even got off the bus one stop early to walk to SBSS and enjoy the street along the way.

Open Space Benefits

Natural beauty. The elders particularly emphasized the natural beauty of open spaces. Regardless of their age, gender, ethnicity, or where they live, elders immediately referred to flowers and trees when asked about

defining open spaces. The feeling of a breeze and having fresh air were other essential components of open spaces in their minds. In all, elders shared a universal image of open spaces: tranquil scenery full of plants and flowers where they can enjoy fresh air and natural beauty.

Physical health. According to the elders, participating in different exercise programs at SBSS improved their physical health. Such programs included fall prevention, arthritis training, tai chi, Zumba, line dancing, and so forth. One elder highly recommended tai chi: "It's really good for the joints." Other elders exercised at home: One female, African American said, "When I am at home, when I hear music on my radio, I dance." Another male, Caucasian elder did simple workouts throughout the day: "I start every morning when I get up. Before I go to bed, I also do some. You can also do some when watching TV." In addition to group exercises, some elders mentioned doing yoga and swimming by themselves regularly.

Furthermore, elders connected physical activities with open spaces. Almost all the elders mentioned: "The tai chi instructor said outdoor tai chi could be very beneficial." They not only practiced the slow joint motion and balance that tai chi emphasizes but also accepted the underlying Asian philosophy that human beings should be connected with the universe by working out in open spaces. Elders particularly welcomed the scene shown in Figure 51.

Mental health. Participating in various group exercises also promoted these elders' social interactions. Many made friends through these classes and, in turn, friends encouraged continued participation. Female seniors, in particular, like to exercise in groups. A female, Filipino commented: "It is fun. We miss each other if we do not see each other, every day we say where is so and so, how come she didn't show up today." Also, group exercises may encourage elders to work out more



Figure 51: Tai Chi image shown in focus groups. Credit: Flickr user EJC01.

than usual. As one female, Korean elder mentioned: "It is normal that [when] people are by themselves, they get embarrassed but when it is two of us, not anymore." Another female, Filipino elder nicely summarized the benefits of physical activity:

"I think it affects a lot, because especially if you come here and you do your little exercise you do a little walking, it affects. You become alive and it does not matter how old you are. You do these routinely, like every day. We come here everyday. I think that is good enough for us, and it helps us [be] alive, healthy, and we become more sociable."

Clearly, elders enjoyed participating in different types of physical activity and recognized their advantages for both their physical and mental health. Exercising in groups increased their social interactions, which in turn, encouraged them to exercise more.

Perceived Dangers

Human threats. Elders did perceive dangers in their use of open space. They were very cautious about unsupervised children or youth playing in parks, especially when skateboarding, bouncing balls, and running

around. They feared bumping into them. Elders were also afraid of falling due to their decreasing ability to react quickly and/or maintain balance. As one male, Caucasian elder concluded: "Broken bones, you know, for many people, the next step is deceased."

Children and youth mostly occupied the two parks near SBSS. As one female, Korean elder described: "We have another park around here but nowhere for us, because a lot of younger generation come over and it's too many. They have a lot of playing with ball...[It's] not safe." As a result, given the large number of children playing in the two nearby parks, the elders refuse to go there.

Elders expressed disappointment about the deteriorating amount of respect shown to them by younger generations. As one female, African American elder pointed out: "[B]ut the problem is their parents have not taught them to be respectful [to the older generation]." Moreover, elders noted additional disrespectful behaviors, such as smoking and people not cleaning up after their dogs. Across all the groups, elders complained about smoking. For example, one female, Filipino elder complained: "Even if you cover your nose they blow smoke in front of your face." In the same group, another female, Filipino elder talked about dog owners: "They leave their mess and not picking up the mess. I love animals, OK? But they leave the mess there."

Elders perceived these unpleasant moments as being related to young people's reckless behaviors that not only had an impact on the beauty of the environment but also demonstrated their disrespect for other people. They identified themselves as "victims" of disrespectful behaviors and attitudes of younger generations.

Figure 52: Elders are cautious of homeless in MacArthur Park.

Credit: Liz Devietti



Elders further described how they had been victims of crimes, such as robbery, attempted robbery, and theft. They avoided the two parks nearby because of the high probability of encountering drug dealers and gang members there. These dangerous individuals and potential life-threatening scenarios deterred elders from visiting the parks. One elder (female, Filipino) related a frightening moment in one of the nearby parks:

"Yeah, it happened to me. I was going to church. It was Sunday and under broad daylight and someone tried...she was not able to get my purse, but she broke the handle and you know what, I did not even hear, because she was running barefoot."

The elders conveyed concern about homeless people, drunkards, and people loitering in the park. Consequently, they refused to be present with these groups in the same open space. One female, Latina stressed: "I won't go to the park if there are homeless people." Elders considered the presence of such "undesirable" individuals loitering in the parks as evidence of a poorly maintained park but also as potential dangers for them. Such perceived physical threats and associated psychological insecurity deterred elders from going to the existing parks and enjoying open spaces.



Figure 53: Curved wood path shown to focus groups.

Credit:
Pedbikeimages.org

Environmental hazards. Elders' psychological insecurity regarding open spaces and parks was also related to certain physical attributes in these environments, which they referred to as hazards. Elders were very conscious of their physical safety, regarding to tripping and falling.

They were disappointed about the streets surrounding SBSS. One male, Korean elder emphasized: "There are a lot of kick-ups and breaks on the sidewalks, which is not safe for us." Elders, in general, also refused to go to a park full of trash. One male, Caucasian elder pointed out: "Litter can trip you up, you can step on a plastic bag and lose your footing." Tripping on trash was also related to other park users' behaviors. For example, one male, Filipino elder complained: "Because of homeless people, trash is all over the place. They just throw things away." So homeless people not only become human threats for the elders but are also perceived as contributing to potential environmental hazards regarding the elders' physical safety.

In terms of natural attributes, although elders liked to see green vegetation and flowers in an open space, they preferred having clear visibility of the walking paths; otherwise, they felt intimidated. "I like all the foliage but that is very dangerous. See how the shrubs grow out into the walkway?" noted one female, Latina elder after seeing the photograph shown in Figure 53 of an open space with rich foliage.

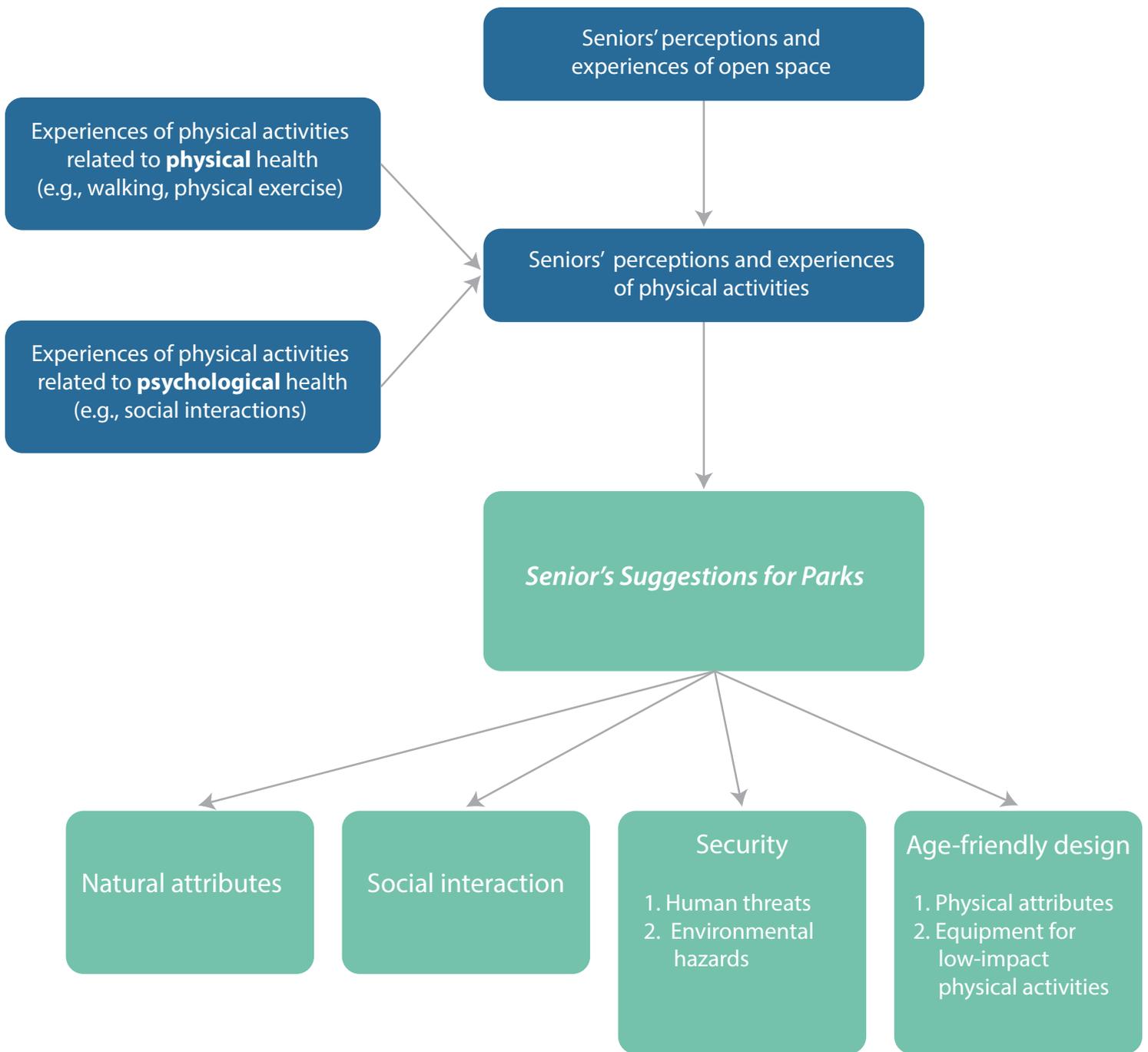


Figure 54: Seniors' perceptions and experience of open spaces and physical activities.

Furthermore, elders were sensitive to weather, noting their need for protection from extreme weather conditions. Covered rest areas were favored for the protection they provide from the heat of the sun in summer and rain and cold wind in winter. In addition, elders paid special attention to the immediate surroundings of rest areas. Elders, especially those using assistive devices, such as canes, wheelchairs, or walkers, felt vulnerable to falls because of uneven surfaces, such as cracks on the cement or uneven edges between different ground materials.

Ideal Park

The elders understood that physical activity in open spaces would benefit both their physical and mental health. Figure 54 presents how the seniors' perceptions and experiences of open space relate to their perceptions and experiences of physical activity.

Their experiences of spending time in open spaces and participating in physical activity collaboratively influenced their conceptualization and design suggestions for a senior-friendly park. They emphasized four main aspects of their ideal park:

1. Presence of natural attributes;
2. Age-Friendly design that encourages physical activity;
3. Security from human threats and environmental hazards;
4. Environment designed to support social interaction.

Natural attributes. Living in a city largely made of concrete contributed to elders reporting very few opportunities for connecting with nature—something compounded by their limited mobility and heavy reliance on public transportation in Los Angeles. They appreciate the opportunity for a park that incorporates natural elements in its design.

All elders appreciated beautiful natural attributes in open spaces. Water scenes, such as the one shown in Figure 55, that include a pond, a lake, a creek, or waterfall, were favored across the five groups. Additionally, most elders advocated having some wildlife in the park, such as ducks and birds, despite the potential for them to create a dirty environment. One male, Caucasian elder commented: "Maybe we can have some bird feeders."



Figure 55: Park with lake shown to focus groups.

Credit: Glenbrooke News

Furthermore, elders emphasized having ample greenery in the park, including trees, flowers, and grass. Elders praised trees not only for their aesthetics but also for their utility, since shaded areas are critical for elders to enjoy the park in hot days. All five groups recommended providing opportunities for gardening of flowers and vegetables and described the role of gardening as threefold: 1) flowers for aesthetics, 2) vegetables and/or fruit for food provision for themselves and the community, and 3) a social and therapeutic activity for them.

Elders also wanted to enjoy fresh air, sunshine, and a breeze in the park. They longed for access to a tranquil and beautiful natural environment so that, as one female, Asian Indian elder noted: "People can walk along the lake, see the birds, and talk." For these seniors, a park with natural beauty meets their needs for aesthetic appreciation, access to nature, and social interactions.

Age-friendly park design. Elders described a number of elements whose presence, size, or particular shape would make the park friendly for them. Clean, spacious restrooms first came into their minds when discussing physical attributes within the park. For example, one male, Caucasian elder pointed out: "We need facilities, some restroom facilities. For older people, we need...we have to use more restrooms. It is the nature of things."

Figure 56: Bench shown to focus groups.

Credit: Bruno D. Rodrigues



Similarly, elders suggested frequent, spacious rest areas in the park consisting of sufficient seating, shade, and having clear visibility. Elders would like many benches in the park with specific designs meeting their needs. Benches should be comfortable, have a backrest with armrests, and shapes that support seniors' back and waist. Elders favored benches made of wood, which were seen as more resistant to temperature variations (Figure 56). As one male, Latino elder reasoned: "They would not get too cold or too hot, compared with metal ones." Such benches should be frequently placed so that when elders become too tired to stand, they would not have to look far to find a bench to rest.



Figure 57: Cardplaying shown to focus groups.

Credit: F.J Jasinski



Figure 58: Park shelter shown to focus groups. Credit: Tracy Kloock

Elders also requested sufficient space around each bench for people with walkers or wheelchairs. These benches must have an ample circumference devoid of uneven surfaces, such as sand or soil, which may create a loss of balance for seniors with canes or walkers. There should be ample space between a bench and the sidewalk border to allow room for a wheelchair, so that wheelchair users and their companions can enjoy the bench together.

The elders also advocated for the presence of picnic tables with similar specifications as benches, noting their desire of being able to observe beautiful park scenery while seated on a bench or around a picnic table (Figure 57). Elders requested that the location of rest areas, such as benches and picnic tables, is under a tree, canopy, or gazebo to provide shade (Figure 58).

With increasing ages, these elders' skin and eyesight have become growingly sensitive to sunlight. They need protection from the strong Southern Californian sun or cold wind in winter. However, too much shade may also be problematic, as elders wished having clear visibility of the entire park. Noticeably, their desire for safety motivated their desire for visibility. Elders were fearful of becoming lost in open



Figure 59: Walkway shown to focus groups.

Credit:
Pedbikeimages.org

spaces. Even when suggesting having multi-level plant beds to increase the greenery areas in the park, elders insisted that the raised design could improve visibility. They demanded to be able to see other individuals in the park as well as be clearly seen by passers-by. Likewise, elders highly recommended adequate lighting in the park to secure visibility and further give them a sense of security. A majority of elders appreciated the setting shown in Figure 59 for its clear visibility and definite route of the walking path.

In terms of physical activity, the elders understood that their limited and decreasing strengths were best suited for low-impact exercise, such as walking and tai chi. A range of physical activity options could be potentially motivating to maintain their physical health and also engage in social interactions during physical activity. Thus, they favored the provision of walking paths, low-impact exercise machines, and/or exercise stations in the park. Taking safety into consideration, elders suggested that walking paths are made of rubbery materials so as to non-slip and also have handrails (as shown in Figure 60).

For exercise purposes, walking paths could be marked with distance traveled. For example, one female, African American elder suggested: "It might be interesting to put quarter mile markers on the path." Using these markers, elders would be able to challenge themselves by



Figure 60:
Walkway railing
shown to focus
groups.

Credit: Northwest
Woodland Services,
Inc.

increasing their walking distance over time. For aesthetic design, these walking paths would be in natural shape, curving their way around the park. In order to take more advantage of a small park, elders suggested winding paths be decorated with intermittent, raised flowerbeds to create natural beauty.

Elders insisted on including low-impact exercise machines and/or stations in the park. These elders revealed inadequate opportunities for physical activity because of the limited space and strictly scheduled physical exercise classes at SBSS as well as their limited access to public open spaces. As a result, the elders requested more access to physical activity facilities in the park, such as a variety of low-impact exercise machines or exercise stations, stationary bicycles, elliptical machines, and exercise machines for their arms. In addition, one female, African American elder suggested combining walking paths with exercise machines:

"Walking paths, walking routes, where we can actually go walking and actually do exercise. You can have stations along the walkway, so you have something over here, and something over there. It's like obstacles along the walking path and you can actually stop and do exercise."

Combining walking paths and exercise stations might also encourage groups of seniors to participate in the physical activity together. Elders expressed their embarrassment of exercising alone, particularly in front of younger generations in the gym. They would rather stop going to the gym completely or only exercise with their peers. With a variety of low-impact exercise machines and walking paths built with sufficient

attention to the elders' physical constraints and needs, the park could provide a welcoming atmosphere for them. Additionally, elders emphatically desired ample exercise space in the proposed park. Most of the elders participate in tai chi classes at SBSS and understand the benefits of practicing tai chi outdoors. A spacious area with grass and trees would be an ideal location for group Tai Chi at the park.

Safe, clean, and quiet environment. All elders insisted on a safe and clean environment for the park. When they saw filthy surroundings in the open spaces and/or parks, their desire to visit them simply ceased, regardless of the various causes, such as homeless people, children, or animals. For example, elders who objected to having animals in the park were mainly concerned about the likelihood of ruining the tidy environment.

Elders viewed a filthy park as unsafe and a potential threat for tripping, falling, and even crime. They voluntarily avoided parks, rather than taking the chance of being hurt. As many Korean elders stressed: "We need to make sure that [people] care about the park and it is clean. In the parks nearby, nobody cares. These are the reasons for me not going." With the trash or rotten leaves piling up unattended, elders' image of open spaces and/or parks deteriorated quickly. This mentality may relate to their physical vulnerability rooted in insecurity and their previous traumatizing experiences of being targets for criminals in unguarded environments. Psychologically, they refused to subject themselves to a dangerous environment that may be potentially harmful. Since elders were particularly alarmed about potential human threats in the park, they suggested various strategies to maintain a safe environment. First, they proposed to have full surveillance camera coverage for the park. They understood that the police would not be able to patrol the park at all times, and also realized that due to financial constraints, there would be



Figure 61: Park surveillance sign

Credit: Liz Devietti

a shortage of staffing to manage and oversee the park. The utilization of surveillance cameras would help to reduce the number of staff needed and possibly keep some dangerous individuals out of the park. However, several participants, who serve as advocates for seniors in the community, expressed concern about the cost of such surveillance cameras and suggested a community volunteer system to oversee safety at the park. Another safety strategy discussed was the installation of good lighting at the park as well as emergency phone boxes at the front gate and at the end of a walking path. In case of an emergency, elders would have easy access to these phone boxes that directly connect them to local police.

Most elders felt strongly that the proposed park should be for "seniors only" to avoid the potential dangers of contact with younger generations. As one female, Korean elder suggested: "You should have a big sign, saying 'Seniors Only.'" Another male, Latino elder commented: "I think if you want to build a park for seniors you have to make it strictly for seniors. Otherwise you are going to have all the children running around and causing trouble." Since most open spaces are mostly catering to children and teenagers, these elders expected to have the proposed park only for themselves. "So people know that's a seniors' only area, and only us can use it, because if kids are around, they will be running to you; they don't care" was noted by another female, Asian Indian elder. In the view of many elders, excluding young adults from the park could protect seniors from the psychological discomfort related to disrespectful behaviors and attitudes of young generations, and even environmental damages, such as vandalism and graffiti in the park. Meanwhile, some suggestions about integrating different generations in the park were also



Figure 62: Elders watching child's play.

Credit: World Bank Photo Collection

heard. Some elders mentioned they would enjoy watching children play from afar. In particular, elders who had grandchildren would love to have a section in the park where they could bring them to play. However, the majority of elders in the focus groups weighed towards an exclusive park for seniors rather than integrating with younger generations in the park.

Social interaction. Interestingly, and despite most elders' desire for a "seniors only" park, they viewed this park as rooted in the community. Likely because these elders received significant social support from SBSS and various service programs offered there, they were motivated to give back to the community. They envisioned that this park would become a physical location for them to develop and participate in community-based programs that could also benefit the neighborhood.

First, elders suggested utilizing the space in the park to host regular community-based programs, such as monthly or weekly farmer's market and a food bank. They would find it rewarding to share the vegetables and fruit grown from their gardening in the park. Noticing the increasing number of immigrants in the area, the elders noted that SBSS could provide English language classes for immigrants of different ages at the park. From their experiences of communicating with Korean and Latino(a) seniors in the senior center, English-speaking elders also suggested having Korean or Spanish classes to improve verbal communication with their peers.

The elders viewed communication as a building block for strengthening the social role of the park. They suggested that the park could become a center for information exchange with bulletin boards and newsstands providing local news in different languages as well as an outdoor reading or lecture room. Since most seniors do not have access to the Internet, such communicational strategies may better meet their needs. Such facilities would likely connect and attract more elders to the park. These elders expected that the park could help them extend their existing social support networks and develop more ties with the local community.

Recognizing the diversity in this neighborhood, elders further recommended hosting distinct cultural events and entertainment in the proposed park, such as celebrating Chinese New Year and July 4th regular live music concerts, “movie nights on the lawn,” barbeque areas, and game tables. If the park has age-friendly facilities and sufficient security, elders would feel safe and remain in the park during evening hours for these cultural and social events.

Additionally, these elders enjoy entertainment by playing board games at SBSS, such as bingo, chess, and Chinese checkers. So they recommended having game tables in the park as a way to increase social interactions with their peers. They articulated similar requirements for the game tables in terms of safety, materials, accessibility, shade, and location as previously mentioned for the rest areas. Figure 63 illustrates the essential features of a senior-friendly park from the participating elders' perspectives. Each circle represents an important attribute or elements as expressed by them. The size of each circle indicates its proportionate importance relative to the other elements (i.e., as evidenced by the number of times it appeared in the discussion). Thus, safety issues, including human threats and environmental hazards, represent predominant concerns for a park specifically designed for seniors.



Figure 63: Elements for a senior-friendly park.

Other factors included attractive natural elements (e.g. trees, grass, and flowers) to create a beautiful, inviting, and cozy atmosphere in the proposed park. Elders further elaborated for appropriate age-composition of users (with preference for a seniors-only park), equipment and facilities for low-impact physical activities, well-maintained, adequate and age-appropriate facilities for elders (e.g. restrooms, benches, tables, signs, frequent rest areas, non-slippery ground surfaces, handrails, etc.), and activities and events that support social interaction and communication.

Differences Across Elders

When comparing across the five focus groups of elders, several differences stood out that may be due to their ethnic and cultural backgrounds. English- and Spanish-speaking elders (e.g., Caucasians and Latinos) were comparatively more open to age-integrated parks

required a spacious park. Korean elders particularly emphasized their ethnicity. During the focus group, they mentioned many times “We Korean ladies” and noted that badminton was a “Korean” physical activity. Compared with other groups, Korean elders insisted throughout the focus group session that the park should be gated with constant monitoring. They were more concerned than other groups about their physical safety, such as uneven sidewalks, hilly walking paths, and the need for handrails. Korean elders were also the more critical group, criticizing the cleanliness of existing open spaces. Latino elders focused more on the visibility and lighting at the park. Other English-speaking elders commented more on the use of facilities in the park, such as if a picnic table is big enough for a group of elders or if a water fountain would be easily accessible to elders with walkers or wheelchairs, as the one shown in Figure 64.

Asian American elders (e.g., Koreans, Indians, and Filipinos) were particularly sensitive to disrespectful younger generations. They prioritized coming to SBSS to participate in physical activity in groups, especially for female seniors, and viewed activities at the center as a social support network more than elders of other ethnic backgrounds.

In terms of park design, Latino elders emphasized blending the facilities with the overall scenery of the park. Other elders focused more on specific feasibility, utilization, and safety of particular park facilities, suggesting, for example, having age-friendly and low-impact exercise machines and benches in the park. In particular, Korean elders suggested the use of different types of materials or facilities to increase safety and also the provision of Wi-Fi in the park. Additionally, Korean elders preferred a straight walking trail, while other elders preferred winding ones. Future research could explore further differentiation in



Figure 64: Drinking fountain shown to focus groups.

Credit: Cindy Mc

tastes based on ethnic, cultural or other socio-demographic factors. Regardless, the differences encountered serve as a reminder that elders are not a homogeneous group and attention to their specific needs is important.

Staff Perspectives

Staff identified themselves as “future seniors” and referred to their long-term work and interaction with elders at SBSS as inspiration for some of their insights in designing a park for seniors.

Challenging environments in parks. Staff considered safety as the most important component of parks and open spaces. Observing the two parks nearby, they pointed to their many environmental limitations, which made them inappropriate for elders. Examples included too few trees, no shade, hilly roads, and lack of attractive scenery. They noted that facilities in these parks were not suitable and were too poorly maintained for elders, such as concrete benches with no back support, filthy water, trash, limited rest areas, and uneven sidewalks. Staff noticed that seniors at SBSS, despite the close proximity of these parks, avoided going there for safety reasons. In addition, staff pointed out that parks in Los Angeles generally cater to children and teenagers, which might also explain why few elders visit them regularly.

Staff underscored that psychological insecurity was a critical factor that prevented elders from enjoying the two nearby parks. According to staff, some elders had experienced unpleasant incidents in these parks, which further aggravated their negative impressions. In addition, staff knew about some uncomfortable encounters that some elders had with disrespectful youth in public open spaces. Staff recognized that elders were very nervous about the potential for being pushed by individuals or crowds in open spaces, especially by adolescents, which would likely result in a fall. They identified the potential dangers for elders encountering youth skateboarding, roller-skating, ball bouncing, or cycling. Unfortunately, the two proximate parks encapsulated nearly every possible negative attribute for the elders at SBSS, preventing them from enjoying them in any possible way.

Protecting seniors. Staff suggested a variety of specific park designs to protect the elders. They suggested a large number of benches with shade or covers and with easy access for pedestrians and individuals on wheelchairs. In particular, one female, Caucasian staff member noted that restrooms merited specific attention: "They should be large enough for wheel chairs and walkers, with hooks to hang a cane or a handbag, handrails beside the toilet, and easy locks for quick access in case of a rush."

Staff discussed the importance of providing surveillance at the park but understood that financial reasons may undermine this need. However, they noted that as an alternative to the presence of police officers, an alternate authority figure such as park staff or a volunteer park supervisor in uniform could be present to provide support. Staff suggested separating park areas for different age groups. They realized that elders would likely enjoy watching children play. But again, safety concerns outweighed this idea. However, given the likely impossibility of

a “seniors only” park, staff suggested that sidewalks should be painted with two lines designating one side for fast walkers and the other for slow walkers in order to accommodate the elders’ slower walking pace. In terms of the entire atmosphere in the park, staff recommended visually pleasing scenery, a feeling of coziness, lots of greenery, and a partially enclosed park design.

Providing social support. Staff emphasized that the various activities offered at Saint Barnabas provided social support for elders. At times, the social support network formed through these activities might be more crucial for elders than the activities themselves. For example, one male, Caucasian staff member commented, “Because technically, the ESL [English as a second language] classes are by and large a... what should I say, a support group.” So staff emphasized that the proposed park should be programmed to provide more social support for elders, such as volunteer opportunities and intergenerational programs. In particular, one female, African American staff member recommended the incorporation of a children’s social service curriculum in the proposed park: “We can rotate events and bring children to serve. Because something that is missing with youth in America and especially at risk youth in Los Angeles is the value for service and principle and that simple principle: learn how to serve seniors or how to respect them.”

Connecting youth and seniors through various social service programs would teach youth the value of social service and to be respectful to the older generation. Thus, staff pointed out that hosting service projects for youth or service opportunities for youth and elders in the park would be valuable. Furthermore, staff recognized that it was not the number of people the elders interact with, but the regularity and consistency of group interaction that mostly benefits the elders. Most elders coming to

SBSS live quite isolated lives. They benefit from a friendly atmosphere, especially one that encourages them to interact with their peers and other age groups. For social programs, staff suggested having regular youth orchestra performances at the park. They also suggested having single interlocked benches set to face each other. Single seat benches would both deter homeless people from sleeping on them, and elders would not lose their social interaction opportunities.

Physical activity programs. Staff emphasized various ways to encourage elders to actively participate in physical activity. Physical activities for healthy seniors should recognize their physical limitation and special needs. For example, although elders love to dance, typical Zumba programs should be modified to meet their strength levels and increase more specific joint movement to alleviate arthritis symptoms. For elders with cognitive impairment or Parkinson's disease, staff suggested that walking paths incorporate a painted line for them to follow. They described a "wandering garden" that they had seen in use and enjoyed by those with cognitive impairment. Staff noted that these elders were particularly attuned to color and the sound of water. Elders with cognitive impairment would benefit from having a colored line on a circular walking path or around a water fountain in the proposed park.

Connecting with the community. Staff viewed this proposed park as a platform to connect elders with the local community, in particular, providing opportunities for integrating elders of different ethnicities. For example, a newspaper stand in the park offering local/community newspapers in Spanish and Korean would enable elders and their family members to stay involved with their community. Another example was the creation of an on-going gallery exhibit at the park of neighborhood photos taken by elders, in order to encourage ethnic minority and immigrant elders to immerse in the community.

Staff also suggested collaborating with nearby community centers and/or schools to provide gym equipment so that elders may use to exercise for longer periods of time as well as over summer vacations. Similar to the elders' suggestions, staff proposed having gardening areas in the park for elders to grow vegetables and fruit to give back to the community.

Drawing from their working experiences with elders, and identifying themselves as a "next generation of seniors," staff suggested building a park that emphasized physical and psychological safety and collaborating with local communities to offer park programs that enhance the social support networks for elders with diverse backgrounds.

Figure 65: Memory Garden, Portland. Credit: Brian Bainson Quartrefoil



Family Caregivers' Perspective

Family caregivers of seniors with cognitive impairment or physical disabilities offered insights on how a park would best suit their needs when accompanying their frail family members. One of the most critical aspects for this group was park accessibility. Since family caregivers have to accompany their elderly parents or spouses, they need easy public transportation access to the park and/or sufficient parking areas for those who drive. As emphasized, limited parking space or remote parking areas would make it impossible for them to take their frail family members out on a regular basis. For example, a female, Latina caregiver had some unpleasant experiences: "Close to my area is a museum. That's very nice. But the parking is a nightmare. You have to go back every hour [to feed the meter], and you have that in the back of your mind the whole time, so you can't even enjoy it because you are worried about it the whole time."

Family caregivers also asked for facilities with special accommodations, easy access for walkers and wheelchairs, and restrooms that could be used by the elders and themselves. They could be in the same restroom stall when their family member needs help; for example, sons could assist their mothers with toileting.

Safety was another important aspect. Family members emphasized that the park should be only for elders. One male, Latino stressed: "No running or skateboarding kids," because many of the elders have balance issues and would likely fall if bumped by a running child or hit by a ball or a skateboarder. Family caregivers noted that the presence of homeless people at the park was problematic. Indeed, this became such an outstanding concern that one male, Latino family caregiver vetoed

the popular wooden benches. As he explained: "I know it [the bench] doesn't have arm rests [like the wooden one], but I would go for the metal one, only because at night the homeless people wouldn't be so willing to sleep there because it's cold." The caregivers' strong advocacy for a "seniors-only" park came from their perceived vulnerability and the wish to remove potential human threats from the park.

Many frail or cognitively impaired elders do not usually want to leave their homes or participate in any type of physical activities. Family members prioritized how to encourage their loved ones to go outdoors versus how to actually engage them in exercises. Frail seniors with various conditions might only participate in some very low-impact physical activities such as walking. Family caregivers suggested combining socializing and walking to encourage elders to be outdoors for longer periods of time. If the park includes a café and/or picnic areas, frail seniors may become more willing to spend time there. Furthermore, the park should also have natural features that family caregivers could enjoy along with the elders, such as greenery, trees, flowers, and water scenes, or even a trickling stream. The sound of water would be very appealing for frail elders with cognitive impairment. As a result, the park should be both aesthetically and socially attractive to them.

Overall, caregivers were very involved with their loved ones and attuned to their particular needs. They required easy and close access to parking lots, disability-friendly walking paths, and spacious single-stall restrooms in the park. Frail seniors with physical disabilities and cognitive impairment would reluctantly participate in any activities and would not venture to open spaces when they still have unmet needs. Designing a park to be both socially and naturally attractive for these frail seniors constituted a priority for their caregivers.

Figure 66: Fountains can provide soothing water sounds

Credit: Dayla



Conclusion

In conclusion, the eight focus groups with elders, staff who work with them, and family caregivers gave significant information and guidance on how to design and program senior-friendly parks. Across the different types of groups, they agreed on the need for such parks and the incorporation of natural and aesthetic elements, safety features, opportunities for socializing, and equipment for low-impact physical activities. The specific design and programming suggestions that were gleaned from these focus groups, along with the information gained from the interviews (chapter 3) and the scholarly and professional literature (chapter 2), inform the guidelines and recommendations that appear in the next chapter.

Endnotes

1. "St. Barnabas Senior Services" <http://www.sbssla.org>



Credit: RSVP Photo Art

CHAPTER 6

DESIGN GUIDELINES

FOR SENIOR-

FRIENDLY PARKS



Figure 67: Mature trees offer adequate shade. Credit: Jesse Raaen

Design Guidelines Overview

This chapter synthesizes information presented in the previous chapters to offer suggestions and recommendations for creating senior-friendly parks and open spaces. More specifically, the chapter draws from both primary and secondary sources as well as from an overview of specific open spaces built in different parts of the world for seniors. Primary sources included focus groups with ethnically diverse seniors at St. Barnabas Senior Citizen Center and interviews with administrators and staff of local nonprofits and state and federal agencies. Secondary sources included a detailed scanning and examination of the scholarly literature on the open space needs of seniors. Additionally, this chapter draws from design guidelines on healing gardens¹ and therapeutic landscapes,² as well as guidelines, toolkits, and manuals about the design of age-friendly cities.^{3,4,5,6}

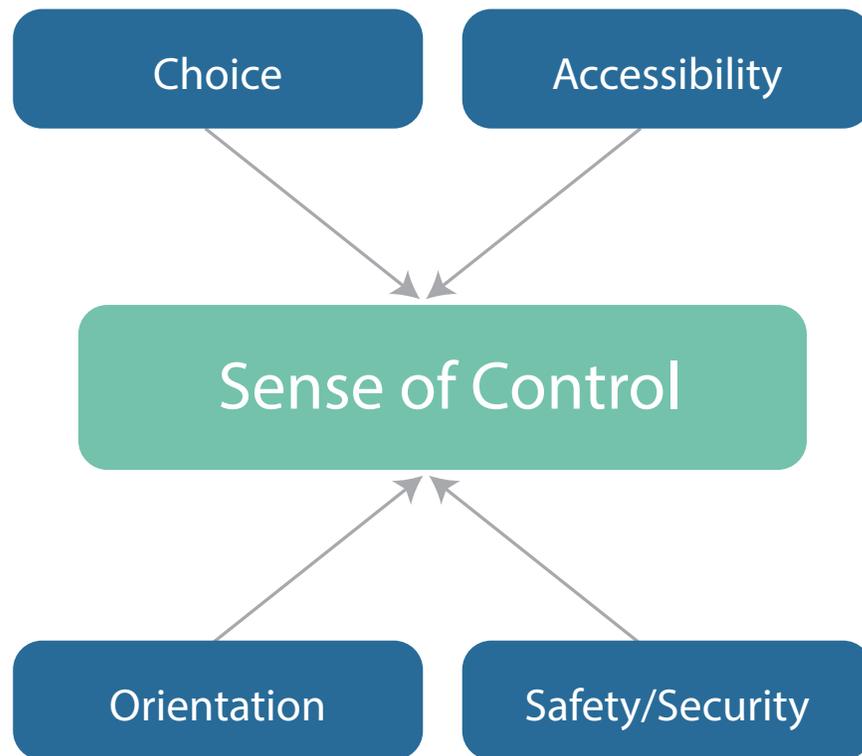
The design guidelines presented in this chapter intend to provide useful information and suggestions for building parks, playgrounds and open spaces with the elders in mind. These guidelines are general and not context-specific, as they intend to be useful to different communities wishing to create senior-friendly parks. Nevertheless, planners and

designers of such spaces should consider carefully the physical and environmental characteristics of the context (topography, size, micro-climate, surrounding land uses, street network, etc.), as well as the social characteristics and stated needs and preferences of the intended users. Seniors are a heterogeneous group in terms of age, physical and cognitive capacities, and socio-cultural characteristics. Thus, prior to the creation of a senior-friendly park, the preferences and needs of the likely prominent users should be identified and addressed in the design.

The information gleaned so far from the different sources leads us to propose ten purposes or outcomes that senior-friendly open spaces should strive to satisfy. These outcomes are valued by most park users but are particularly significant for the elders. The sections that follow offer suggestions for each of the following ten outcomes.

- Control
- Choice
- Safety and security
- Accessibility
- Social support
- Physical Activity
- Privacy
- Contact with nature
- Comfort
- Aesthetic and sensory delight

Figure 68:
Components of
sense of control.



Control

Control refers to persons' "real or perceived ability to determine what they do, to affect their situation, and to determine what others do to them."⁷ A sense of control is of particular importance to elders, who may be seeing some of their physical or cognitive abilities lessening. A sense of control is achieved when users in parks have a good sense of orientation and understanding of the park's layout and its different offerings. Orientation is particularly important for elders who may suffer from cognitive impairments. Control is also related to three other items from the previous list: 1) sense of safety/security at the park; 2) choice; and 3) accessibility. Thus, people feel that they have a good sense of control if they can access the park easily on their own, easily comprehend how to use its facilities, wander around without hurdles, and feel safe (See Figure 68).

Orientation, Legibility, and Way-finding. For a park to provide a sense of orientation people must know that it exists and be able to see it from some distance, can visit its different parts without getting lost, and understand and be able to take advantage of its offerings.



Figure 69: Marsh Park entrance sign.

Credit: Los Angeles River Annex

- Provide a visible sign that marks the entrance of the park and indicates its name.
- Provide appropriate way-finding signage in the parts of the neighborhood from where the park is not visible.
- Design a legible park layout that can be comprehended easily from the main entry.
- Provide a map with the park's layout posted at the entrance and at other areas inside the park.
- Provide a clear layout of paths in the park.



Figure 70: Large park map, Sokolniki park, Russia.

Credit: Andrey Kamatsky



Figure 71: Pan Pacific Park, Los Angeles. Credit: Chris S.

- For large parks that have a variety of different settings (e.g. barbeque and picnic areas, bowling lawn, etc.) provide some distinctive and highly visible features (e.g. a kiosk, a clock tower, a fountain, some boulders, etc.) that can serve for orientation.
- Avoid the creation of dead-end paths.
- Provide educational and informational signs at the park such as directions for how to use equipment and facilities, plant labels, etc.
 - Offer signs in Braille
 - Use visual graphics on signs
- In addition to signs, utilize other sensory cues (sound patterns, pennants, flower fragrances, etc.) for way-finding of significant destinations.
- Have attractive boxes or newsstands near the park entrance that carry flyers with information in different languages about park programs and activities.



Figure 72: High Line accommodates sitting and walking.

Credit: Jeff Kamerer

Choice

Park users, both young and old, value choice. Visitors to a park should have a variety of places to wander, a variety of things to look at, and a variety of activities and programs for passive and active recreation and enjoyment. Encouraging flexibility in park design and offering different choices in the ways that a park can be enjoyed makes good sense.

- Provide subareas in the park that offer different qualities and opportunities (e.g. walking paths, exercise stations, areas with lush greenery and vegetation, meditation garden, barbeque areas etc.).



Figure 73: Movable seating in Grand Park, Los Angeles.

Credit: Sterling Davis Photography



Figure 74: Card game in the park, NYC. Credit: Design for Health

- Offer different options for people to sit – spaces in the sun and in the shade; spaces that are more open and public; and spaces that are more enclosed and private.
- Offer different views and vistas and different things (e.g. flowers, art, birds, etc.) to view and enjoy.
- Offer opportunities for both passive recreation (places to sit, read, people-watch, play cards or other board games, and socialize with friends) and active recreation (walking paths, exercise activities, gardening).
- Provide walking paths that offer different visual and sensory experiences, have different lengths, and various levels of difficulty.
- Provide equipment for active recreation that can accommodate different levels of physical activity (from low-impact exercise to more strenuous activities).
- Provide some flat, grassy, multi-purpose areas that can accommodate a variety of different activities (e.g. tai-chi, yoga, picnicking, etc.).
- Provide a variety of seating options for a person alone, for small and larger groups. Provide movable chairs, right-angled seating that allows conversation between a few people, circular inward-facing seating that accommodates larger groups, and more secluded individual seating for those who seek privacy.
- To the extent possible, provide features and materials that can be moved, manipulated, and changed.

Figure 75: Gate at North Park, Los Angeles.

Credit: Los Angeles River Annex



Safety and Security

The need for safety is more pronounced among elderly park users.⁸ Indeed, concerns about their safety may lead elders to avoid using parks and public spaces.⁹ Elders may fear that they will be the victims of crime when at the park and (as we heard in the focus groups) may be quite nervous that their encounters with particular individuals (homeless, teenagers on skateboards, etc.) may have negative consequences for them. The fear of tripping and falling is another major stress felt more by older than younger adults. Additionally, as we heard in the focus groups, having to cross busy streets represents another source of stress for some elders.

According to Le Grange, et al. (1992), opportunities for natural surveillance of a site by bystanders, who may intervene if there is trouble, discourage potential criminals. Good maintenance of the site shows that there are natural guardians and caretakers and makes park visitors feel safer.¹⁰ Thus, park design elements that increase visibility of the park are particularly important. Additionally, the risk of falls may be reduced within the park by the employment of specific design elements and materials. Lastly, elders may have particular fears about having to cross busy streets with high levels of traffic. In response, we recommend placing the park on a low-traffic street, providing traffic lights at street crossings, and ensure these crossing have safe crosswalks included.



Figure 76:
Emergency phone
in park.

Credit: Talk-a-
phone

Crime

- Keep clear lines of walking paths and other park settings. Avoid rich foliage and shrubs that obstruct views.
- Consider enclosing the park with transparent decorative fencing that can provide a sense of enclosure but which does not obstruct visibility from the street.
- Include a decorative gate and consider locking the park after sunset (unless there are organized activities).
- Provide good lighting throughout the park. Avoid dark, concealed areas.
- Provide emergency phone boxes.
- Consider technological innovations that increase security (motion activated lights, surveillance camera coverage, emergency report systems, etc.).
- Keep the setting clean and well-maintained.
- Provide single-seat benches to avoid individuals sleeping at the park.
- Organize community volunteers to oversee safety.

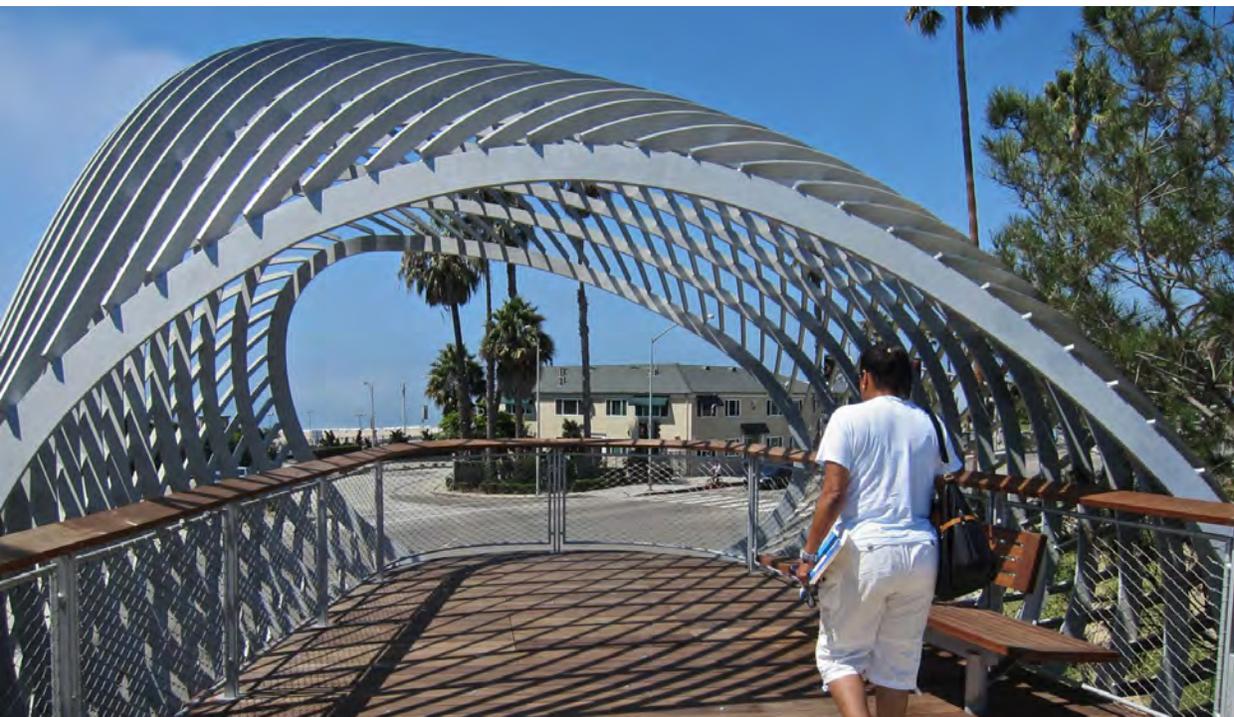


Figure 77: Enclosed
covering, Tongva
Park, Santa Monica,
CA.

Credit: Don
Anderson



Figure 78: Smooth pavement surface. Credit: Mark Oci

Falls

- Choose non-slippery paving materials that provide appropriate traction on walking surfaces.
- Provide even and not cracked sidewalks, paying particular attention to the interface between paved and unpaved surfaces.
- Ensure that control joints on paving units and concrete are no wider than 1/8 of an inch and without beveled or rounded edges to prevent canes, crutches, wheels or high heels from becoming trapped.¹¹
- Provide paths that are flat or have a very gentle slope (less than 2%) and have no steps.¹²
- Keep all paths clean from trash to avoid tripping hazards.
- Provide curbs along paths to make movement safer for those with walkers or on wheelchairs.
- Provide handrails on stairs, ramps, and paths.
- Provide good lighting along all paths.
- Prohibit skateboarding or cycling inside the park or allow it in only designated areas.

Figure 79: Raised crosswalks for traffic calming near park.

Credit: Ryan Snyder



Traffic

- Locate park on a quiet, low-traffic street. If the park is bordered by a busy street, provide additional entrances from quieter neighborhood streets.
- Consider routes to the park from the surrounding area and provide safe crossings at intersections with clearly visible and audible crosswalk signaling.
- For signalized intersections near the park, allow more time to cross the street before the light turns red and consider installing a leading pedestrian interval in signal phasing to allow people to start ahead of traffic, avoiding conflicts with right-turning vehicles.
- Consider traffic calming measures on streets bordering the park such as bulb-outs (sidewalk extensions that decrease the street crossing distance), pedestrian refuge islands (places where pedestrians can wait if they cannot get across both sides of the street), and other features.



Figure 80: Curb ramps for safe crossing.

Credit: Dan Burden



Figure 81: Flat and wide sidewalk in Central Park, NYC.

Credit: Paul Kessel

Accessibility

The ability to access a park quickly, safely, with ease, and without impediment influences individuals' decisions to visit it. Indeed, the proximity of parkland to the place of residence is an important determinant of park visitation.^{13,14} This is particularly true for the elders, who typically have less physical stamina than younger adults. For them, the ease of the journey to and from the park as well as the ease of movement and orientation while at the park become particularly important.

Accessibility has both physical and psychological dimensions. Certain locational and park design characteristics will make the space more welcoming to elders and also enhance its physical accessibility. Additionally, the provision of supportive programs and activities at the park promotes its psychological accessibility.

- Consider placing the park in relation to other facilities used by seniors such as senior citizen centers, churches, community centers, and other community institutions.
- Connect the park to the larger community both physically and programmatically through community events and activities that appeal to seniors (e.g. outdoor health clinic; yoga for seniors, farmers markets, etc.).

Figure 82: Transit near park, Portland.

Credit: Eric Fredericks



- Seek to locate the park near public transit stops.
- Provide adequate and barrier-free sidewalks around the park.
- Provide ADA (Americans with disabilities act) accessible and universal design for all sidewalks leading to the park and all paths at the park.
- Limit grade changes and provide ramps with a gentler pitch than normal. A maximum pitch of 1:20 (instead of the standard 1:12) is recommended for elders on wheelchairs.¹⁵
- Pathways should be flat (grade less than 2%) and wide enough (5-7 ft) for ease of those using walkers or wheelchairs.
- Introduce sitting opportunities (benches) along common routes to the park.
- Provide ample handicapped parking close to the park.
- Provide adequate signage for easy way-finding. Signs should be in large fonts and also easily visible by people on wheelchairs. The average eye level of a person on wheelchair is 43 inches. Thus, signs should not be placed higher than 54 inches from the ground.¹⁶



Figure 83: Benches placed en route to park.

Credit: Ricardo Mollo



Figure 84: Benches can facilitate interaction. Credit: Raffaele Magellano

Social Support

Social support refers to the human need of wanting to be connected with other human beings and be cared for and supported by them. Empirical research has found a strong connection between high levels of social support and health.¹⁷ Parks and park activities can encourage interaction and socializing among elders and between elders and other groups, while, as discussed in the focus groups, particular activities taking place at the park can connect the elders to their larger community and promote intergenerational exchanges. Appropriate design can create spaces that enable people to see and interact with one another, described as sociopetal, while appropriate programming can involve the elders and younger adults in common recreational or educational activities.

- Provide seating arrangements that facilitate social interaction and allow people to watch human activity, such as seats at right angles or on a circle facing each other, as well as movable seats.
- Place some seating along paths.
- Provide “props” for social interaction and small-group activities such as barbeque pits and tables for chess, board games, and cards.
- Provide a flat area for informal gatherings and large-group activities and outdoor classes (e.g. tai chi and yoga classes, ESL classes).

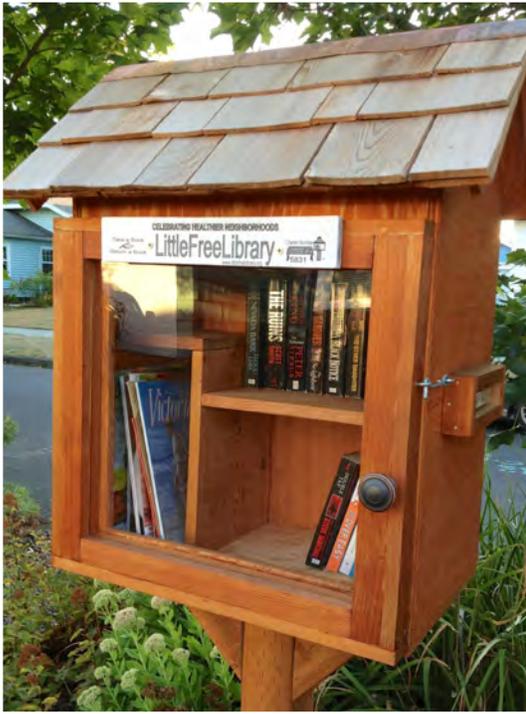


Figure 85: Little Free Library.

Credit: Mark McClure

- Provide “foils for conversation”—architectural, natural or landscape elements (kiosks, water fountains, flowers, pigeons, etc.) that bring people together around a common focus.¹⁸
- Organize neighborhood events at the park that can bring people together such as community picnics and parties, annual cultural events such as 4th of July and Chinese New Year celebrations, and more regular events such as farmers markets, food banks, music concerts, and movie nights at the lawn.
- Facilitate community exchanges such as food banks, community supported agriculture, and exhibits of neighborhood photos taken by the elders.
- Consider organized events that bring youth and seniors together such youth orchestra performances.
- Create a node for local information exchange with a bulletin board and a newsstand.
- Create an outdoor reading room, such as a ‘little free library,’ where community members can donate and read books.



Figure 86: Radial benches, High Line Park, New York City.

Credit: Steven Severinghaus

Physical Activity

Parks and open spaces can encourage physical activity by providing appropriate settings for active recreation and walking. Elders are more likely than other groups to live sedentary life styles and become intimidated by the prospect of exercise. This despite walking and physical activity having positive health effects on both younger and older adults.¹⁹ The reluctance of many older adults to get involved in physical activity may be a result of fear because of declining capacities and limited stamina but also because of lack of appropriate spaces and social support for exercise. Some elders in the focus group discussions expressed embarrassment of exercising alone at the park. Yet, our research showed that older adults are flocking to the outdoor recreation areas for seniors that exist in different parts of the world and offer low intensity exercise equipment.

Walking is the easiest and most common type of physical activity for seniors. Planners and designers can encourage walking by creating ability-appropriate and attractive walking paths that reach interesting destinations (e.g. a fountain, a gazebo, a vista, an outdoor coffee shop). Incentives and opportunities for walking and exercise should be provided at different lengths and levels of difficulty to address the varying levels

Figure 87: Well used equipment area in China. Credit: R. Drager





Figure 88:
Gardening can
provide necessary
physical activity.

Credit: Ngaire Hart

of ability of elders. Additionally, exercise can be achieved through activities and games that may also be fun for some elders such as yoga, tai chi, bocce ball, lawn bowling etc. Gardening is yet another activity that involves movement and exercise.

- Provide walking loops and paths out of non-slippery and rubbery materials that are easy on the feet.
- Place destination points at the end of paths to encourage/attract people to reach them.
- For long trails and paths, install ¼-mile markers to measure walking progress.



Figure 89: Low
impact exercise
machines.

Credit: Niall Kennedy

Figure 90: Organized Tai Chi class.

Credit: Jimmy Tae Jik Chung



- Provide low-impact exercise equipment such as outdoor stationary bikes and elliptical machines.
- Provide spaces for exercise away from heavy-traffic areas, under shade and with interesting views.
- Provide a spacious area with grass and trees for group classes or games.
- Provide organized senior-friendly physical activity classes.
- Encourage and support gardening.
- Build a “wandering garden” for elders with dementia.²⁰



Figure 91: Men exercising together.

Credit: John Yip



Figure 92: Man on bench. Credit: Gary Warner

Privacy

Even in public spaces, individuals often yearn for some level of privacy, tranquility, and quiet. Parks can offer a break from the high-pace urban setting that surrounds us and serve as small urban oases within the hustle and bustle of busy city life. Many elders in the focus groups, who lived in small urban apartments, repeatedly emphasized their need for a tranquil environment at the park. Thus, design and landscaping should offer sufficient levels of privacy in some subareas of the park, allowing people to avoid social interaction, if they so wish.

- Locate the park in a quiet neighborhood location.
- Seek to screen outside noises with natural sounds (water, breeze moving through tree leaves, etc.).
- Place seating areas away from the noise of the street.
- Use buffer planting to minimize street noises.
- Offer park subareas that enable visitors a level of physical and visual privacy.
- Use buffer planting to create a sense of enclosure around the quieter and more private subareas of the park.
- Offer some seating where visitors can sit alone.
- Allocate some areas in the park for a more private use such as personal garden plots or personal bird feeders.²¹

Figure 93: Calming water feature with ducks.

Credit: Eduardo Caastro



Contact with Nature

Parks bring nature into the city and can offer their visitors positive “natural distractions,” defined as “environmental features that promote an improved emotional state in the perceiver, may block worrisome thoughts, and foster beneficial changes in physiological systems.”²²

- Prioritize flowers, verdant plants, and vegetation ('softscapes') over concrete pavements ('hardscapes') in the park. A ratio of 30% hardscape and 70% vegetation is recommended.²³
- Plant mature trees that can offer adequate shade to park visitors.
- In small parks, arrange flowers in multi-level plant beds to save space.
- Include calm or slowly moving water elements (such as small ponds, creeks, waterfalls).
- Consider the park as a setting for unthreatening wildlife (birds, butterflies, squirrels, ducks etc.).
- Instill nature sounds (water, birds, breezes, wind chimes).
- Encourage opportunities for gardening flowers and vegetables.



Figure 94: Water feature, Douglas Park, Los Angeles.

Credit: Lené Levy-Storms



Figure 95: Umbrellas protecting park users from sun, Sunset Triangle, Los Angeles. Credit: LADOT/Jim Simmons

Comfort

Provision of physical and psychological comfort should be an explicit goal of park design. Visitors are not likely to visit a space and spend some time there if it makes them uncomfortable. Psychological comfort relates to feelings of safety, which was discussed previously. In this section, we will propose guidelines that aim to provide the elders but also other park visitors with physical comfort.

Location

- Place the park away from traffic noise and other environmental nuisances.

Seating

- Provide rest stops and opportunities for seating every 25 ft along main paths.²⁴
- Provide comfortable seating with ergonomic designs and with backs and arms. Seats should be at least 16-17 inches from the ground. Chair arms should be at least 10 inches above the seat.²⁵



Figure 96: Gazebos provide shade.

Credit: Missy

- Prefer natural seating materials such as wood or stone that are more resistant to high temperatures. For the same reason, avoid materials that retain excessive heat such as metal.
- The elders are particularly sensitive to glare. Avoid seating materials that have bright and reflective surfaces that produce glare (e.g. aluminum, white surfaces, etc.).

- Movable seats should be of sturdy but also light materials so that they can be moved easily.
- Allow sufficient space around benches and tables for people on wheelchairs and walkers.
- Immediate areas around benches should be devoid of uneven surfaces.
- Place seating and tables under large trees or other elements (kiosks, gazebos, trellises, canopies) that can provide shade.

Protection from Sun, Wind, Rain, and Glare

- Parks in cold climates should have settings with adequate exposure to sunlight.
- Place trees and vegetation strategically to protect from direct sunlight and minimize glare from the sun.
- Provide elements that can protect from sun such as umbrellas, kiosks, arbors, etc.
- Provide settings that offer overhead protection.
- In windy areas, orient parks or elements in the park to protect from prevailing winds.
- In hot climates, orient park in a way that allows cool breezes.

Figure 97:
Universally
accessible drinking
fountain.

Credit: Joe Di
Stefano



Amenities

- Provide universally accessible water fountains.
- Provide multiple clean and spacious restrooms with hooks for canes, including restrooms for handicapped access.
- Provide multiple trash receptacles.
- Provide aesthetic lighting at low or intermediate lighting levels to avoid glare.
- Provide both fixed and movable tables where people can have a picnic or eat lunch.
- Provide water fountains and electric outlets near the seating areas.
- Encourage food stands in the park.



Figure 98: Trash
and recycling
receptacles, Grand
Park, Los Angeles.

Credit: Waltarrrrr



Figure 99: Flat and curvilinear path, Grand Park, Los Angeles. Credit: Waltarrrr

Comfortable Movement (see also guidelines for Accessibility)

- Provide paving that does not inhibit movement.
- Opt for curvilinear and flat paths as they are more easily navigable for people on wheelchairs.²⁶
- Provide contrasting colors on pavement materials and seating to respond to some seniors' compromised depth of field.
- Ramps should have a maximum pitch of 1:20 (instead of the standard 1:12).
- If steps are necessary, they should not be more than 4 inches high.
- Provide handrails along paths.

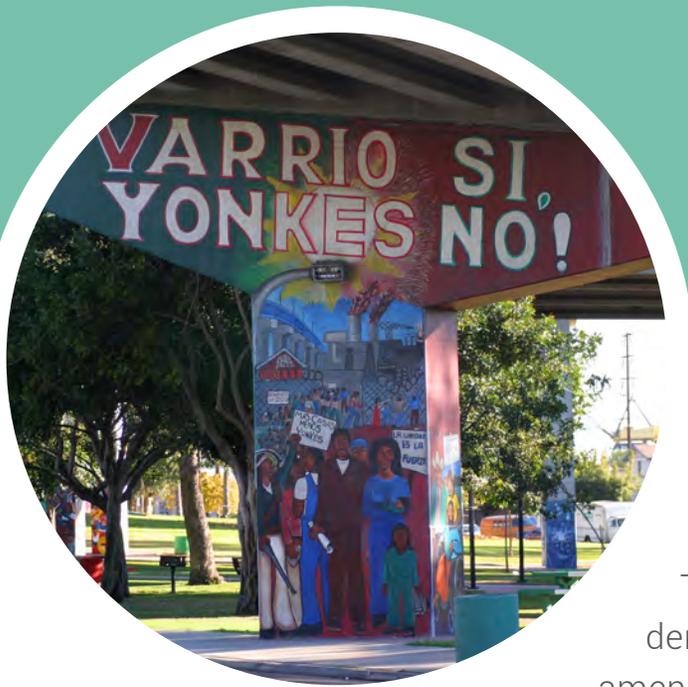


Figure 100:
Freeway pylons
transformed by mural,
San Diego.

Credit: Nathan Gibbs

Aesthetic and Sensory Delight

Parks should offer an aesthetic respite in the city and an opportunity for sensory enjoyment. This is particularly important for residents in dense inner city areas that lack the settings and amenities that can offer such aesthetic delights.

As has been argued, “providing opportunities to see and manipulate natural objects and observe seasonal changes can encourage park users to use the park as a source of positive sensory stimulation.”²⁷ Such stimulation should not only be visual but also auditory, tactile, and olfactory. Designers can achieve this aesthetic delight through aesthetically pleasing design features and landscaping, art pieces, enchanting sounds, and fragrant flowers in a park. Parks designed with seniors in mind should take into account that older adults walk at slower paces and cover shorter distances than younger adults.²⁸ For this reason, sensory interesting features should be placed at shorter intervals than it would be necessary for spaces designed for the general public. However, there should be a careful consideration of the amount of visual variety so that it does not result in visual clutter.

- Place fixed seating and paths in ways that take advantage of interesting views.
- Place fixed seating and paths to take advantage of pleasing views beyond the park (e.g. a view of a mountain).
- Screen or transform unpleasant views (e.g. a blank wall, an asphalt parking lot) through vegetation, mural painting, or art placement.
- Opt for gently curving (instead of straight) paths.



Figure 101:
Seating with views,
Roosevelt Island,
New York.

Credit: Addison
Godel

- Choose plants and flowers carefully to ensure varying sizes, contrasting colors, pleasing fragrances and textures, and seasonal variety.
- Identify and use plants that have special meanings for particular cultural or ethnic groups that live in the park's vicinity.
- Consider the installation of outdoor art pieces and fun and whimsical features in the park.
- Plant mature trees.
- Plan for soothing and natural sounds by incorporating water elements and mature trees in the park.



Figure 102: Blank
wall screen with
mural, Austin.

Credit: Wendy
Morgan

Park Operation: Towards an Intergenerational Playground?

We complete this report with some notes about the programming and operation of a park for seniors. As has been stressed in our interviews, “it is not an average person that is a senior citizen. People have different needs because of age, gender, culture, income, ability.”²⁹ Thus, a park’s “software” – the programming of activities that take place in its setting – should be tailored to the expressed needs of its likely visitors.

One dilemma that emerges for park providers is if and how the created setting will be shared by different age groups. The majority of elders in our focus groups showed a strong preference for parks that are created for their exclusive use. However, interest exists among gerontologists and psychologists to promote intergenerational settings because they have the potential to address the alienation and segregation often encountered by elders. We believe that intergenerational parks can work satisfactorily for older adults if they: 1) privilege them in the use of particular equipment and facilities; 2) provide facilities for their use in parallel with facilities for use by non-seniors; 3) exclude certain activities that are deemed dangerous by older adults; and 4) provide a “safe haven” within the park – an area in the park that elders can call their own.

Privileging the use of older adults: As presented previously, “seniors’ playgrounds” in Germany, the UK and Spain are privileging older adults in the use of particular equipment. For larger parks that can accommodate multiple exercise stations, at least one exercise station should be designated for the exclusive use of adults over 65. For smaller parks, specific equipment (e.g. low-impact machines) in an exercise station should be reserved for senior users.

Figure 103: Soft pavement walking track, Seoul.

Credit: Design for Health



Parallel facilities. As we witnessed in our focus groups, elders are often nervous that children or teenagers may crash into them in parks, leading to their tripping and falling. For this reason, they are often reluctant to walk or exercise. To address this fear, park designers may designate facilities for seniors in the same park that exist in parallel with facilities for other age groups. For example, “seniors-only” walking and jogging lanes can be designated in walking paths that allow for the slower walking pace of older adults.

Exclusion or confinement of hazardous activities. Certain activities that represent hazards for the health of elders such as skate boarding or ball playing should be confined in specifically designated and fenced areas or even excluded from parks.

Safe havens. Our discussion with a number of elders at SBSS made clear that they feel that neighborhood parks do not cater to them. For this reason, they are reluctant to visit a public park (MacArthur Park) that is close to the senior citizen center. One way to make a park more welcoming to older adults is to provide them with a safe haven, a space that they can call their own. In larger parks, this can be a senior citizen center; in smaller parks, it can be a small covered setting with adequate and protected seating and tables.

Epilogue

Parks and open spaces represent important assets for cities for their physiological, psychological and social benefits they provide to urbanites. Studies have shown that such benefits are particularly important for older adults, who often do not have other satisfactory options to exercise, socialize, or enjoy nature. However, the design and programming of parks have long neglected the needs and preferences of older adults. As a result, older adults are mostly absent from parks in the U.S. In contrast, a number of other countries have actively catered to this group during the last decade, developing parks that are inviting towards them. Drawing from such examples and best practices and benefiting from the insights of elders and individuals working on their behalf, this report has put forth concrete guidelines for the development of senior-friendly parks in the U.S.

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APPENDIX A: GLOSSARY OF TERMS

Older Adults – (also referred to as seniors , elders and elderly)

Referring to people over the age of 65. This group may vary widely in terms of health, stamina, and physical abilities. Indeed, people who are 65 may not have much in common with those who are 95. It can be helpful to think about three broad sub-categories of older adults in terms of their age, while recognizing that significant variations may exist within each category in the range of individuals' abilities and level of independence.

Young-old – People who are over 65, may be still working, have a mostly full range of abilities and a great degree of independence.

Old-old – People aged 74 – 85, who are mostly retired, have moderate range of abilities and independence.

Oldest-old – Referring to people over the age of 85; they have the lowest range of abilities, are the most susceptible to health issues, and have the lowest degree of independence and mobility. Notably, this is the fastest growing group of older adults, growing at a rate of four times the rest of the United States population.¹

Open Space – (also referred to as parks or green space)

An outdoor public space with greenery and other natural and human-made elements. Parks can vary widely in size, shape, purpose, and whether they serve passive or active recreation. Open spaces may include a variety of features such as playgrounds, ball fields, picnic areas, benches, water features, trees and vegetation.

Physical Activity (also referred to as active recreation)

Bodily movements which require the expenditure of energy.² The Centers for Disease Control and Prevention in 2011 set recommendations about the amount of physical activity that should be undertaken by older adults. They recommend at least 150 minutes of moderate intensity aerobic activity, such as walking, every week, and 2 or more days of muscle strengthening activities that work the major muscle groups. This can be achieved by lifting weights or doing activities that incorporate this muscle strengthening like digging while gardening. Older adults can also meet the physical activity guidelines by completing 75 minutes each week of vigorous aerobic activity, like jogging, and 2 days of muscle strengthening activities.

Age-Friendly City (also age-friendly community, livable community or lifetime neighborhood)

This term describes city areas that incorporate physical and social factors to promote and encourage active aging by paying particular attention to how the environment affects older adults. This term was first used by the World Health Organization in 2005³ where they examined 33 cities across 22 countries. They organized the elements that make up an age-friendly city into 7 categories summarized below. Other applications of this concept have varied slightly, but are similar in general. The mix of categories and criteria for determining whether an area is age-friendly can vary and the exact balance between physical and social environment factors is dependent on the exact application of the age-friendly city concepts. Lui, et al. have created Table 1 to demonstrate the different applications of the age-friendly cities in different international contexts.⁴

	Age-friendly city (WHO)	Lifetime neighbourhood (Dept. for Communities & Local Gov, UK)	Livable community (AARP)	Livable community (National Association of Area Agencies on Aging, USA)	Elder-friendly community (University of Calgary, Canada)	Elder-friendly community (The AdvantAge Initiative, USA)
Physical Infrastructure	Outdoor spaces and buildings	Built environment	Land use	Planning and zoning		
	Transportation		Transport and mobility	Transportation	Being mobile	Maximizing independence
	Housing	Housing	Housing cooperation and communication	Housing		
Social Environment	Communication and information				Ready access to information and services	
	Respect and inclusion			Public safety	Importance of being valued and respected; financial security and personal safety	Addresses basic needs
	Civic participation		Public education and involvement in community planning	Culture and lifelong learning		
		Innovation and cross-sectoral planning	Leadership		Community development work	Promotes social and civic engagement

Table 1: Elements of age friendly communities by different application. Credit: Lui, et al. (2009)

World Health Organization Age Friendly Category Descriptions⁵:

1. Outdoor spaces and buildings: covers public and open space paying particular attention to pavements that are well maintained and non-slippery, lighting to promote safety, and public toilets.
2. Transportation: providing reliable, affordable and accessible public transit options with specialized services like those for disabled persons and other on-demand public transit services.

3. Social Participation: public events and activities for a diverse population and strategies for outreach to ensure that even people at risk of social isolation know about the events.
4. Respect and social inclusion: older adults are asked for their input, are visible in the media and included in community activities particularly those for families.
5. Civic participation and employment: older persons have opportunities for paid and volunteer work and are not discriminated because of age.
6. Communication and information: community information is distributed through different means including face-to-face communication and are cognizant of the needs of elders (e.g. larger print in written messages, slow and clear audio messages, etc.).
7. Community and health services: health services are conveniently located and accessible by public transit, and offer support to promote and maintain the elders' good health.

Aging in Place

Aging in place means that elders can remain in their homes if small modifications can be made (like adding mobility aids) to allow independence in a safe manner.⁶ In addition to the characteristics of the individual home, the surrounding environment should also be supportive of elders' needs.

Universal Design

The design of buildings, products, and environments that are inherently accessible and can be usable by all people, including elders and people with disabilities, and to the greatest extent possible, without the need for adaptation or specialized design.⁷

Older-Adult Playground (also Seniors' Playground)

A park or part of a park that is designed for older adults and often contains low-impact exercise machines that focus on balance and flexibility.

Intergenerational Playground

A space that has a combination of exercise machines for adults and playground features for children.

Endnotes

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APPENDIX B: LIST OF INTERVIEWS

Ray Bloomer, Director of Education and Technical Assistance, National Park Service, January 17, 2014.

Jeff Brown, Senior Landscape Architect, California Department of Recreation and Parks, February 3, 2014.

Kate Clark, Planner for Policy and Program Development and Chair, Philadelphia Corporation for Aging, April 10, 2014.

M. Katie Hirning, AARP California State Director, December 27, 2013.

David Ishida, Administration for Community Living, Department of Health and Human Services, December 19, 2013.

Mike Kim, Project Manager, Los Angeles Neighborhood Land Trust, February 12, 2014.

Roisman Nadine, Administrator, LA Jewish Home, December 12, 2013.

Kathy Sykes, Aging Initiative, Environmental Protection Agency; Senior Advisor on Aging and Sustainability, January 15, 2014.

Bria Verdugo-Uy, Program Director, ONEgeneration Senior Enrichment Center, April 8, 2014.

APPENDIX C: FOCUS GROUP SESSION PROTOCOL

Participants

Each focus group session included six to nine participants. The small group size allowed a synergy to develop in discussions because it was not intimidating for seniors to share their thoughts.¹ In the beginning of each session, confidentiality and voluntariness of participation were emphasized. The only information collected was the participants' age and ethnicity. Thus, all participants remained anonymous throughout the study. Each session lasted from one to two hours. Assisted by native Korean and Spanish-speaking staff members working at SBSS, two groups were conducted in Koreans and Spanish, respectively. The remaining six sessions were conducted in English, given the sufficient English proficiency of each participant. All eight sessions were audio-recorded with the participants' permission.

Seniors were recruited according to inclusion criteria: 1) aged 60 and over and 2) currently using services at SBSS. The Director of Wellness and Longevity Programs of the center assisted with the recruitment of seniors. Thirteen staff members, who work directly with seniors and/or are in charge of seniors' activities volunteered to participate in two additional focus group sessions. Family caregivers were a convenience sample, as they came to the monthly family caregiver meeting in the senior center. All participants were compensated with a \$20 gift card for completing one focus group session, and each participant only attended one focus group session.

Table 1 presents the demographic characteristics of the 39 participating seniors. Participating seniors identified themselves (i.e., self-report) as African Americans (2), Asian Americans (19), non-Spanish Caucasians (5), or Latino(a) (13). Table 2 shows the age and gender of the 13 participating staff members, while Table 3 shows the 8 family caregivers' gender, relationship to the family member attending SBSS, and age of this family member.

Seniors' Self-Report Ethnicity		Gender		Age		
		Male	Female	Average	Range	
					Min	Max
Group 1	Latino	2	5	75.9	65	91
Group 2	Korean	1	7	75.1	67	79
Group 3	Mixed ethnicity	2	7	77.3	69	83
Group 4	Mixed ethnicity	3	5	70.9	62	78
Group 5	Mixed ethnicity	5	2	73.3	68	84
All Seniors				74.6 (SD=5.9)	62	91

Table 2: Participating seniors' age, gender, and ethnicities (N = 39).

Staff	Gender		Age		
	Male	Female	Average	Range	
				Min	Max
Group 1	2	5	43.9	24	64
Group 2	1	5	44.7	27	62
All Staff			44.2 (SD=15.6)	24	64

Table 3: Participating staff's gender and age (N = 13).

Family Caregivers' Relationship to the Senior			Family Caregivers' Gender		Seniors' Age		
Spouse	Sibling	Child	Male	Female	Average	Range	
4	1	3	2	6		Min	Max
					71.6 (SD=6.7)	66	78

Table 4: Participating family caregivers' relationship with their loved ones, gender, and seniors' age (N = 8).

Data Collection Process

Three interview guides were developed for seniors, staff members, and family caregivers, respectively, with questions regarding open space and physical activity needs, and preferred park designs. Each session started with two general questions:

- What types of services do participants currently use at Saint Barnabas?
- What services do they wish to have access to but are currently unavailable?

These questions elicited participants' limited access to open space and physical activity. Following, participants were asked about their perceptions of open space as well as their physical activity patterns, if any. Because two large parks exist close to the senior center, participants expressed some of their opinions based on their experiences in these two parks. At the end of each session, photographs were shown of various parks as stimuli to encourage participants to describe their ideal parks for seniors.

Data Analysis

The six English sessions were transcribed verbatim after their completion. The sessions conducted in Spanish and Korean were translated and transcribed by native speakers. The translation aimed to convey the entirety of discussions and emotions involved and so were not necessarily verbatim. All eight transcripts were entered into Atlas.ti 7.0, a qualitative analysis program, which enables comprehensive analyses as well as efficient storing, retrieving, and sharing of data. Data analyses were conducted concurrently with data collection.

All interview data were analyzed together. Initially, two researchers individually open-coded the complete interview transcriptions after reading them thoroughly. The codes used were the same words that participants used to retain authenticity. After open-coding, codes expressing similar meanings were clustered to form categories and families. Finally, the original transcripts were reread to ensure that no themes remained unidentified. All memos and field notes served as audit trails.

Endnotes

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