The Elderly Perceptions And Needs For The Senior Park In Surabaya City

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Abstract : The percentage of elderly citizen of Surabaya City has exceed the national's percentage of elderly people and the number has continued The elderly population percentage in Surabaya city has exceeded the national number, and it continues to increase. The largest population resides in Tunjungan Regency. As it is getting difficult for them to reach the community, senior residents often feel alienated; therefore, facilities are needed to help them interact with one another, for example, a senior park. The elderly have different perceptions and special needs. Accordingly, the purpose of this study is to identify the elderly perceptions and needs regarding the senior park setting in Surabaya. The research method is descriptive qualitative using behavioral observation and cognitive mapping technique for elderly visitors to city parks. The results reveal the senior park zoning based on the elderly needs according to age segmentation. The early-stage elderly zone (55-64 years) covers the need for facilities for individuals and unscheduled activities; the elderly zone (65-70 years old) covers the need for facilities for group sports activities and an area close to the children playground for their grandchildren; the high-risk-stage elderly zone (> 70 years) emphasizes the need for basic facilities focusing on comfort and safety, large areas for communal activities, and a place near the gates and security office to increase the sense of security in high old-age risk, as well as to increase park accessibility for the elderly.

Index Terms: behavior analysis, cognitive mapping, elderly, elderly needs, senior park, elderly perception, park setting

1 INTRODUCTION

Surabaya is the second-largest city in Indonesia. As a metropolis, it has rapidly grown and the development has brought impacts to the city services, one of which is its health services. Consequently, the residents' life expectancy has increased; it is indicated by the increasing number of the elderly population. Based on data from Badan Kependudukan dan Pencatatan Sipil Surabaya (the Population and Civil Registration Agency) [1], the elderly population reached 5.1% in 1990, 7.7% in 2000, and 11.04% in 2010. These numbers indicate the population's steady growth. It was also significantly greater than the national percentage of the elderly population, which was 7.5% of the total population in 2010. The largest elderly population lives in Tunjungan Regency. Elderly have physical and psychological limitations due to the aging process. According to [2], [3], [4], they are physically characterized by their sensory degradation and perception; degradation of the central nervous system and cognitive function abilities; degradation of muscle and bone systems; reduced ability in temperature adaptation; being susceptible to disease; and reduced mobility. While the psychological characteristics are experiencing confusion and disorientation; as well as a shock due to changes in the workplace and family structure, decreased income, having fewer activities with the community, and less participation in social interactions. These characteristics affect the elderly's basic needs in life. Moreover, they have basic needs just like the others; Maslow in [5] pointed out that people have five basic needs: physiological, safety, social, price, and self-actualization needs. Regarding the needs of the elderly, [6] reported that they need to eat healthy food; to reside in a safe environment; to be provided with good health facilities; and to have people to interact with and share their wisdom and experience.

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The elderly characteristics contribute to their basic needs. Thus, the approach is required to specifically meet their needs. As an illustration, the elderly's physical and psychological characteristics are categorized into five basic needs, which are presented in Figure 1.

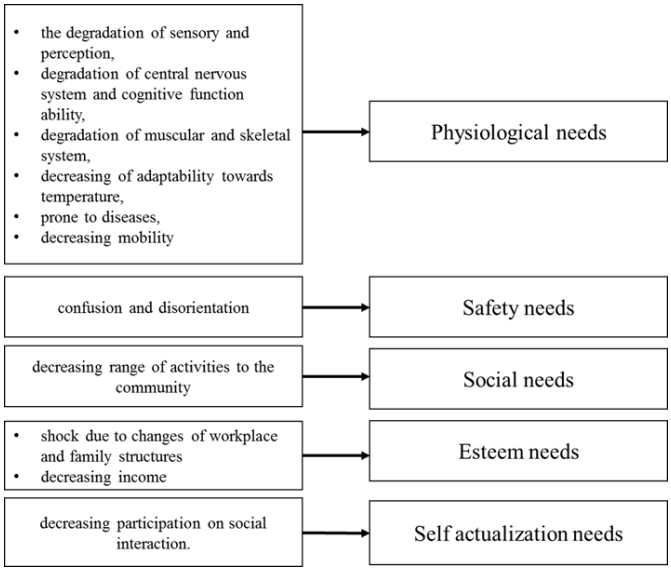

Fig. 1. *Elderly needs in accordance to elderly characteristics*

In reference to Figure 1, the facilities must accommodate the elderly's physical limitations; provide high security, and can support social interaction to create community activities that increase their sense of belonging and self-esteem. [7],[8] asserted that they have basic psychological needs: the need to feel comfortable with themselves and with their environment. Thereby, the elderly can live more independently. It is safe to say that there are three elderly needs: physical, safety, and social needs. Therefore, it is necessary to provide facilities for the elderly. Based on Law Number 43 of 2004 concerning Elderly Welfare, [9] stated that it is necessary to provide special recreational and sports facilities for the elderly.

For instance, the government can provide the senior park to meet the elderly needs. There are 21 city parks in Surabaya, 8 of them are in Tunjungan Regency [10] but are not specifically made for the elderly. Since the elderly have different special-needs from the productive and pre-productive age residents, it is crucial to understand the elderly perceptions of and needs for the senior parks in Surabaya and particularly in Tunjungan Regency, as it holds the largest elderly population. Accordingly, the purpose of this study is to identify the elderly needs and perceptions regarding the setting of a senior park in Surabaya.

2 METHODS

The descriptive qualitative method was employed for analyzing the elderly perceptions and needs regarding the setting of a senior park in Surabaya. Theoretically, there is a close relationship between the needs and the characteristics of the elderly. Therefore, the study identified the characteristics of the elderly visiting city parks in Tunjungan Regency and their perceptions about how they used the space in the park as well as their needs for park setting and facilities. The population was elderly visiting city parks in Tunjungan Regency. The samples were obtained from three parks: the Ekspresi park, the Surya park, and the Persahabatan Korea park, as the elderly, often visited them. The incidental sampling was used as the method. The elderly sampling categorization of each park [11] [12] was the early-stage elderly (55-64 years), the middle-stage elderly (65-70 years), and the high-risk-stage elderly (> 70 years). The technique used to identify the elderly perceptions and needs for the setting of a senior park was behavioral observation and cognitive mapping [17]. In the observational behavior analysis, the researcher recorded and observed the elderly visitors' behavior in the park. While in cognitive mapping, the researcher observed the elderly visitors' perceptions regarding the use of space in the park. The two analytical techniques are utilized to understand the elderly's need for parks; a combination of map sketches explained by elderly visitors and interview notes to build a collective view of the senior park. They are used for identifying the elderly perceptions about the physical, safety, and social needs to describe their collective views about the senior park.

TABLE 1.
RESEARCH VARIABLES

No	Aspect	Variable
1	*Elderly Characteristics [2][3][4]*	*Physical characteristics of the elderly:* • *sensory ability,* • *physical strength,* • *adaptability towards environmental changes* *Psychological characteristics of the elderly:* • *Social interaction* • *Social status changes.*
2	*Elderly needs toward elderly park[2][4][13][14][15][16]*	*physical needs:* • *topography* • *pathway and street furniture* • *signage* • *park layout* • *park's facilities* • *vegetation* *safety needs:* • *accessibility* • *crossing facilities* • *area security* *social needs:* • *interaction space*

3 RESULTS AND DISCUSSION

3.1 Behavior Observation and The Needs of Elderly People toward Park

Based on observation results and interview responses obtained from the early-stage, middle-stage, and high-risk-stage elderly, there are different segmentation characteristics of each age. It was found that in each segmentation group, there were attributes and habits of the elderly in the park related to their profession (employed / unemployed), duration of time spent in the park, and the habit of bringing companions / or coming alone. The early-stage elderly respondents were the largest number of visitors; however, they rarely visited the park, which was only around once or twice a week. Middle-stage elderly respondents are the second largest number to visit the park; their visits were more regular due to their reduced mobility. Some of them had been unemployed, and they brought companions, such as friends, spouses, and/or their grandchildren. The high-risk-stage elderly respondents rarely visited the park due to their increasing physical limitations, reduced mobility, and difficulty in accessing the outside world; whereas most of the urban parks in Surabaya are in the city center. Notwithstanding, this group's visits to the park were more stable and regular compared to other age groups.

TABLE 2.
THE ELDERLY PEOPLE CHARACTERISTIC BASED ON AGE SEGMENTATION GROUP AT TUNJUNGAN DISTRICT URBAN PARKS

Age segmentation group	Attribute	Characteristic
Early stage elderly (55-64 years old)	*Profession:* *- employee* *- entrepreneur* *- retiree (less number)* *Visiting time:* *Morning time (05.00-06.30 wib)* *Companion:* *- none/ came alone (dominant)* *- friend* *- spouse*	*Physical Characteristics:* • *Sensory: still in good condition* • *Physical strength: pretty good, starting to decrease* • *Adaptability: good, able to drive a vehicle on their own* *Psychological Characteristics:* • *Social interaction: social circle was getting smaller, family and friends relatively scattered, still actively participated in surrounding environment* • *Social status changes: diverse, some of them still a senior employee*
middle stage elderly (65-70 years old)	*Profession:* *- entrepreneur* *- retiree (less number)*	*Physical Characteristics:* • *Sensory: starting to decrease (hearing, vision)* • *Physical strenght: starting*

Age segmentation group	*Attribute*	*Characteristic*
	Visiting time: Morning time (04.30-06.00 wib) *Companion:* *- friend* *- spouse* *- grandchild*	*to decrease (get tired easily, getting hard to walk)* • *Adaptability: decreased mobility, smaller reach* *Psychological Characteristics:* • *Social interaction: social circle was even smaller, new role to raise grandchildren, started to join elderly community* • *Social status changes: Most of them retired already, but some of them opened a business.*
high risk stage elderly (>70 years old).	*Profession: Retiree/ not working* *Visiting time: Morning time (04.30-06.00 wib)* *Companion:* *- Friend/ community* *- spouse* *- nanny*	*Physical Characteristics:* • *Sensory: bad (hearing, vision, temperature sensitivity)* • *Physical strength: bad (get tired very easily, hard and/or unable to walk) Adaptability: low mobility, mobilitas rendah, getting senile (disorientation)* *Psychological Characteristics:* • *Social interaction: social circle was small and limited, spent more time at home* • *Social status changes: has accustomed with the unemployment status, filled the spare time with a hobby.*

The differences in the characteristics of each age-segmentation group generate diverse perceptions and preferences about their needs for senior parks. Based on table 2, he divided the elderly needs into three categories: physical, safety, and social needs. Furthermore, table 3 displays the elderly needs for the park grouped by age segmentation. Table 3 describes the special needs of the elderly, so it does not discuss the basic park elements of a public park.

TABLE 3.
THE PHYSICAL NEEDS OF ELDERLY PEOPLE BASED ON AGE SEGMENTATION GROUP AT TUNJUNGAN DISTRICT URBAN PARKS

Age Segmentation Group	*The Physical Needs Toward Park*
Early stage elderly (55-64 years old)	• *Topography: -* • *pathway and street furniture: -* • *signage: -* • *park layout: -* • *park's facilities: all public facilities, individual sport facilities (such as elderly fitness equipment), sport game facilities that don't required too many moves and players (such as Ping-Pong)* • *vegetation: leafy vegetation to create a calm and comfortable atmosphere.*
middle stage elderly (65-70 years old)	• *Topography: -* • *pathway and street furniture: -* • *signage: -* • *park layout: -* • *park's facilities: basic public facilities, children facilities (playground), healthcare services for elderly people* • *vegetation: fruit trees that could be handpicked.* *Physical ability of the middle stage elderly were still similar to the early stage elderly. The physical condition was starting to decreased but they hadn't saw it as difficult to walk upon certain topography and/or particular park layout, especially when the parks in Surabaya were relatively small and not sloping.*
high risk stage elderly (>70 years old).	• *Topography: not sloping, do not want a variety of bumps or contours in the park* • *Pathway and street furniture: the pathway should be clear, not sloping and clean.* • *signage: clear and eye catching signage* • *park layout: simple park layout* • *park's facilities: basic public facilities, healthcare services for elderly people* • *vegetation: leafy vegetation to create a calm and comfortable atmosphere*

According to table 3, the early-stage and middle-stage elderly did not have special needs related to the physical elements of the park; only high-risk-stage elderly required a special-setting of physical elements, such as the slope and spatial planning of the park. However, age-segmentation groups had a different selection of sports facilities. The early-stage elderly required individual sports activities and facilities for smaller group-sport activities. The middle-stage elderly preferred facilities for smaller group-sport activities. The high-risk-stage elderly favored scheduled community sports, so they needed large areas to accommodate their activities.

TABLE 4.
THE SAFETY NEEDS OF ELDERLY PEOPLE BASED ON AGE SEGMENTATION GROUP AT TUNJUNGAN DISTRICT URBAN PARKS

Age Segmentation Group	*The Safety Needs Toward Park*
Early stage elderly (55-64 years old)	• *accessibility : -* • *crossing facilities : -* • *area security : security office.* *The early stage elderly were not really care about accessibility, as long as the park was comfortable and safe.*
middle stage elderly (65-70 years old)	• *accessibility : the park that could be accessed without riding vehicle* • *crossing facilities : -* • *area security : security office, and safety surrounding*
high risk stage elderly (>70 years old).	• *accessibility : the park that could be accessed without riding vehicle* • *crossing facilities : -* • *area security : security office, and safety surrounding*

As seen in Table 4, all age-segmentation groups needed a security and safety office around them, especially for the high-risk-stage elderly. The park accessibility needed to be improved since most of the elderly wished that they could go to the park without riding/driving a vehicle.

TABLE 5.
THE SOCIAL NEEDS OF ELDERLY PEOPLE BASED ON AGE SEGMENTATION GROUP AT TUNJUNGAN DISTRICT URBAN PARKS

Age Segmentation Group	*The Social Needs Toward Park*
Early stage elderly (55-64 years old)	*Interaction space: the early stage elderly people were still had many activities, so that they prefer incidental social interaction in the park rather than the organized ones. Hence, the need of interaction space was manifested in the form of a circular bench on the reflection path for chatting or a small area to do light sports activities together such as a ping pong table.*
middle stage elderly (65-70 years old)	*Interaction space: circular bench on the reflection path for chatting or a small area to do light sports activities together such as a ping pong table. Their sense of community had started to formed by attending healthcare events, hence a larger communal area were needed.*
high risk stage elderly (>70 years old).	*Interaction space: interaction space needed was spaces for community activities (such as taichi), and it would be even better if the community areas were made thematic according to their hobby and/or interest.*

In table 5, the higher the stage of elderly segmentation, the higher the need for intense and scheduled community interaction. It is strongly related to each of their characteristics (table 2) of a circle and social status. The early-stage elderly were still active in the community, so they did not need a particular elderly community, while the high-risk-stage elderly were far from their family and friends, and this made interaction highly needed. It can be viewed from table 3-5 that several needs at each stage overlapped, while several others were different. These findings can serve as a guide to allocating facilities and other park elements, as well as to provide areas of interaction at specific locations in the park. Therefore, to plan the setting of an optimal senior park based on the elderly needs, the park must be divided into three zones based on age segmentation groups, and appropriate setting of each park zone.

3.2. Spatial Cognitive Mapping of a Park by Elderly People

In addition to identifying the elderly's needs for the park, it is also necessary to identify their perceptions of the spatial space in the park. This is to identify areas favored by the elderly. There were three parks they often visited: Ekspresi park, Persahabatan Korea park, and Surya park. Figure 2-4 shows the analysis of cognitive mapping in these parks.

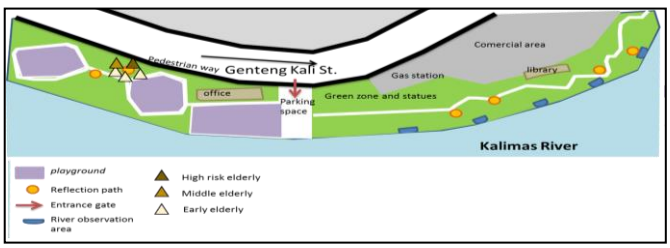

Fig. 2*. Cognitive mapping of Ekspresi Park*

Based on the mapping, the elderly who visited Ekspresi park gathered at a reflection path. Its circular shape and benches made them feel comfortable to stay, to chat, and to enjoy the reflection path. It is near the entrance and on the outer part of the park.

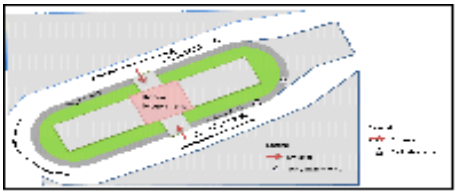

Fig. 3*. Cognitive mapping of Persahabatan Korea Park*

The second park analyzed was Persahabatan Korea park. In this park, the elderly were found walking and/or slowly running in the park's jogging track. They moved along the provided path (marked by the dotted black line). The jogging paths were surrounding and on the outer part of the park.

Fig. 4*. Cognitive mapping of Surya Park*

The last one is Surya park. Initially, it was not potential to become a senior park because of its function as the front yard of the City Hall. However, its universal function and the regularly-scheduled elderly exercise make this park the choice for the elderly to come. They did the mapping after the exercise ended as they spread around according to their preferences. Figure 4 shows that the elderly visitor was divided into two groups: one was on the south side of the park, near the fence, and the other was on the east side of the park, near the entrance of the gate. From the three mappings, it can be concluded that the elderly have the same spatial perception of the park. They prefer to be in special facilities for the elderly (if any), and/or by the park, or near the park entrance. This indicates the elderly characteristic of having low mobility; therefore, they choose the closest location to the entrance gate to ease their walk into their chosen spots. Their preference of the outer part of the park indicates their need for connection with the outside world, giving them a sense of security. In setting a senior park, the elderly's perceptions and space preferences need to be considered to create a comfortable space for them. It is also necessary to combine spatial preferences with the three age-segments to determine the best allocation of park space, without which will result in the ineffective facilities placement in unused spaces as shown in figures 2 to 4, where the elderly only use their preferred space and refuse to use other facilities provided at several other locations in the park.

4 CONCLUSION

The conclusion of this research was the finding of three age

segmentation group of elderly. They are early stage elderly (55-64 years old), middle stage elderly (65-70 years old), and high risk elderly (>70 years old). Early stage elderly people were still active in society. They are individual with the needs of park facilities for individuals and unscheduled activities. They didn't need specific physical conditioning of a park and had access to the park. Middle stage elderly people were experiencing physical and psychological change; Hence, they still didn't feel any need for a specific physical arrangement of the park. But they needed a communal area and played together at light game sport facilities in the park for their social needs. They also need a place near playground to watch their grandchildren play. The last segment, high risk stage elderly people, had the worst condition of the aging process; they need a specific arrangement of park. As physical need, they need no sloping and contour. They also need enhanced basic facilities for safety and comfort. The need for interaction space emphasized a spacious area for communal activities. They need a companion to help them access the park. Hence, the enhancement of park accessibility was important. The cognitive mapping showed the elderly people spatial preferences to the outer edge of the park and place near the entrance gate. Including preference needs on the arrangement of an elderly park to ensure the comfort and safety feeling of the elderly people toward the park.

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