

The Role of Green Open Space in Improving the Mental Health of the People of Pekanbaru City: A Case Study on RTH Kaca Mayang

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Abstract

The city of Pekanbaru has a prevalence of mental disorders, stress, and depression of 5.67% of its population. Efforts that can be made to improve people's mental health from the aspect of spatial planning are to optimize the function of the Green Open Space (RTH). RTH Kaca Mayang is a public space that the people of Pekanbaru City commonly use. This study aims to analyze the role of RTH Kaca Mayang in improving the mental health of the people of Pekanbaru City. This study examines the accuracy and suitability indicators of the current condition of the Kaca Mayang RTH, with a focus on environmental quality, accessibility, facility satisfaction, mental health benefits, and social engagement. Data analysis was qualitatively descriptive and reviewed previous research with a mixed approach, involving non-participative and participatory methods. The results of this study show that aspects of environmental quality, accessibility, and facility satisfaction received good assessments from respondents. Meanwhile, from the aspect of mental health benefits in society and social involvement with fellow communities, the RTH benefit variable in stress reduction received a fairly good assessment. All the results of the assessment and score were obtained from the community's own perception and response when carrying out activities on RTH Kaca Mayang. The final results of this study show that the green open space of Kaca Mayang is effective in reducing stress, improving *mood*, and providing a sense of security, although the relevant government needs to improve in terms of security, facilities, and social participation. In short, it can be said that good management of green areas can be an effective solution to mental health problems in cities.

Keywords: Mayang; Mental Health; Environmental Quality; Green Open Space.

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1. Introduction

Health is a fixed and/or absolute condition that is always needed by humans in order to carry out life activities and functions properly and optimally. *The World Health Organization* (WHO) defines health as a form and condition that is good and perfect physically, socially, and mentally, that is not only free from disease or disability (WHO, 2014). Thus, mental health is a very important aspect for every individual to be considered healthy. Mental health is a condition that creates harmony and balance between psychological functions and the creation of self-formation and adjustment between an individual and himself and his environment, based on faith and piety (Lutfi, 2020). There are several elements that influence mental health and the tendency towards depression. First, biological factors, which include genetic influences and conditions during pregnancy, as well as external factors such as diet, radiation exposure, age, environmental conditions, and disease complications. Second, psychological factors also play an important role in shaping a person's mental condition. Third, the dimensions of the physical environment, which include aspects of space, time, and the availability of nutritional facilities, also influence the stability and mental health of individuals (Dewi, 2012). Following this study, it remains relevant because it provides a comprehensive and contextual initial framework regarding the determinants of mental health in Indonesian society. The previous study presented by Dewi (2012) combined biological, psychological, and environmental approaches in an integrated manner, which until now is still an important reference in local studies, especially due to the limited contemporary empirical literature that specifically reviews the mental condition of Indonesian society in the context of daily life and living space.

Mental health disorders cannot be left alone, but there must be efforts to heal (Freska & Kep, 2023). In mild cases, healing efforts can be carried out in various ways, such as undergoing a sports routine, channeling hobbies, ensuring adequate rest, or even doing nature tourism activities. In the *Health and Human Behavior book*, environmental factors have a significant role in the mental health healing process, with a contribution of 40%, while medical factors are only 10%, genetic factors are 20%, and other factors reach 30% (Nadia, 2023). This then encourages the importance of fulfilling adequate environmental infrastructure for community mental health healing spaces. One of them is by building a Green Open Space (RTH) in the community.

In Law of the Republic of Indonesia Number 26 of 2007 concerning Spatial Planning, included in Article 1 paragraph (1), Green Open Space is defined as part of a residential area and/or urban area that has a special function as a nature conservation area, park area, cultural area, play area, sports area, scenic area, flood control area, plant production area, or other green open space. Green open space (RTH) is known as an important factor in urban planning because of its various benefits. In addition to affecting the aesthetics of the environment, RTH also has a significant impact on people's mental health. RTH function as a provider of fresh air, recreation areas, and socialization spaces for urban residents who are often limited in their access to nature (Bratman et al., 2019).

With a growing population and rapid urbanization, mental health issues are becoming increasingly important to pay attention to. Amid high living pressures and environmental pollution, city dwellers are prone to stress, anxiety, and depression. However, RTH provides an opportunity for city dwellers to interact with nature, which has been scientifically proven to reduce these symptoms and improve their mental well-being. The environmental healing *method* is an approach that can be applied to reduce and overcome stress and mental health

problems in urban communities. This concept refers to an environment that supports the individual's well-being and recovery process, as well as helping to reduce stress levels and stimulate self-healing abilities. The implementation of *environmental healing* can create a healthier environment physically and psychologically, providing significant benefits for the welfare of the community. (Bovenberg et al., 2010).

According to data reports in the period between 2021 and 2023, there has been an increase in the population of Pekanbaru City, which reflects urban dynamics. Data shows that the population increased from 944,584 people in 2021 to 1,020,308 people in 2023 (BPS Pekanbaru City, 2023). The results of the 2018 Basic Health Research (Riskesdas) show that around 1.8 per 1000 Indonesians have experienced mental disorders, especially anxiety, stress, and schizophrenia, which is equivalent to about 400,000 people. The prevalence of severe mental disorders reached 7%, while Riau Province recorded a prevalence of 6.0% (Riskesdas, 2018). In 2020, the target of health services for people with severe mental disorders in Riau Province was 9,533 people, but only 5,773 people (60.6%) received services. The city of Pekanbaru has a prevalence of mental disorders, stress, and depression of 5.67% of its population. Tampan Mental Hospital is the largest mental health service unit in Riau Province, especially in the city of Pekanbaru, with 1,649 patients receiving medical treatment from January 2022 to January 2023. One of the concrete steps that has been taken is the improvement of Green Open Space (RTH) and city parks. In this situation, the elaboration of the problem that is the focus of the research is: *What is the role of RTH Putri Kaca Mayang in improving the mental health of the people of Pekanbaru?* The main purpose of this study is to analyze the role of RTH Putri Kaca Mayang in improving the mental health of the people of Pekanbaru. The results of this research are expected to make a positive contribution to sustainable urban development and care for the environment, and mental health.

2. Methods

This research is focused on the city of Pekanbaru, with a research location that covers the area around Putri Kaca Mayang (RTH). The time for conducting the research was carried out over a period of seven days, or one week, starting from mid-March 2024. The data required for this study included environmental quality, accessibility, facility satisfaction, community mental health benefits, and social engagement. Alcock et al. (2014) found a positive correlation between RTH accessibility and people's mental well-being. The study shows that people who live in environments where RTH is readily available tend to have better mental health. In addition, Roe et al. (2013) found that the selection of cleanliness, beauty, and safety standards in the RTH environment has an impact on mental health in the community itself.

Based on the selection of these indicators, it is then described into 15 variables/questions contained in the survey instrument (questionnaire). Respondents' assessment of the role of RTH Kaca Mayang at this time was carried out using the Likert Scale. The Likert Scale is a scale used to measure the attitudes, opinions, and perceptions of a person or group of people towards a social event or phenomenon (Sugiyono, 2010). The data was collected through a questionnaire from visitors to RTH Kaca Mayang using the Likert Scale assessment (1-5). Where point 1 usually indicates "strongly disagree," point 2 indicates "disagree," point 3 indicates "neutral," point 4 indicates "agree," and point 5

indicates "strongly agree." All of these points are arranged to reflect the respondent's level of agreement or disagreement with the statements given. In addition to the data taken primarily this study also needs the support of secondary data sourced from previous research on mental health and community psychiatry in the city of Pekanbaru.

After the data was collected, the data analysis technique in this study was carried out in a qualitative descriptive manner with a mixed approach from non-participatory (observing remotely without direct interaction) and participatory (actively involved in activities) in its observation, depending on the context and existing situation. This process includes an in-depth understanding of the information gathered, interpretation of emerging patterns, and the formation of a detailed description of the impact of Putri Kaca Mayang RTH on the mental health of the people of Pekanbaru.

3. Results and Discussion

3.1. Characteristics of Respondents

The characteristics of respondents in scientific research are very important to assess the validity and generalization of research results. In the study on the role of Green Open Space (RTH), respondent characteristics such as age, gender, education level, occupation, and socioeconomic status were analyzed in depth. This analysis aims to understand how these variables affect the perception and experience of respondents towards the benefits of RTH. Through the identification of these characteristics, it is hoped that a clearer picture of the respondents' profiles and factors affecting their interaction with green open spaces can be obtained. Previous research has shown that the demographic and socioeconomic characteristics of respondents have a significant influence on the way they utilize and experience the benefits of Green Open Space. For example, Sugiyanto & Kurniawan (2018) found that individuals with higher levels of education tend to be more aware and utilize RTH for improved mental health compared to lower levels of education. In addition, Yulianti (2020) revealed that women use RTH more often for relaxation and social activities than men, who use RTH more for physical activities. These findings reinforce that the variability of respondent characteristics can affect the perception and utilization of RTH. In the context of RTH Kaca Mayang, this study involved respondents with various age groups, ranging from teenagers to the elderly, and diverse educational backgrounds, ranging from high school to college levels. In addition, respondents were drawn from various occupations and socioeconomic statuses, providing a more comprehensive picture of the population utilizing this RTH. Ramadhani (2019) argues that diversification of respondent characteristics is important to understand how various groups in society use and benefit from RTH.

The city of Pekanbaru involves various community groups that actively use this area. The majority of respondents who participated in this study overall, as many as 82.6%, were in the age range of 21-30 years. This significant percentage result shows that RTH Kaca Mayang is very attractive to the younger generation who are at the peak of their productive period. This age group often looks for open spaces as an alternative to do various physical activities, such as light exercise, jogging, or just taking a walk to unwind from busy daily activities. In this study, it was also revealed that there were differences in visiting preferences based on gender. Data shows that women are more dominant in utilizing the RTH Kaca Mayang. This fact indicates that women may have a higher tendency to seek out green open spaces for passive recreational activities. Activities such as taking a leisurely walk, enjoying

the natural atmosphere, or socializing with friends and family seem to be more appealing to them. Some female respondents stated that RTH Kaca Mayang provides a safe and comfortable atmosphere, making it an ideal place to spend leisure time.

Table 1. Gender and Age Characteristics of Respondents

Gender	Number of Genders	Age Range	Number of Respondents	Percentage
Male	19 Respondents	15 - 20	1	0.19%
		21 - 30	13	2.47%
		30 - 50	5	0.95%
		60+	0	0%
		15 - 20	0	0%
Woman	28 Respondents	21 - 30	26	7.28%
		30 - 50	2	0.56%
		60+	0	0%
Total	47		47	

Based on the results of direct interviews, the main motivation of the respondents in visiting RTH Kaca Mayang varied. Most come to do physical activity, such as running, cycling, or other light sports. This shows that RTH Kaca Mayang has succeeded in meeting the needs of the community for those who support a healthy and active lifestyle. In addition, some respondents visit RTH for recreation, looking for entertainment, or simply enjoying the calm and refreshing natural atmosphere. This diversity of motivations shows that RTH Kaca Mayang has a multifunctional attraction that is able to meet various needs of visitors. The characteristics of these diverse respondents provide a comprehensive overview of the user profile of RTH Kaca Mayang. A deep understanding of who is taking advantage of these green open spaces, as well as what motivates them, is essential for RTH managers. This information can be used to design programs and facilities that are more relevant to the needs and preferences of visitors. Thus, RTH Kaca Mayang can continue to develop and provide maximum benefits for the people of Pekanbaru City.

3.2. Characteristics of RTH Kaca Mayang

Green Open Space (RTH) plays an important role in quality city development, especially in improving the environment and social welfare. Research on the characteristics of RTH Kaca Mayang shows that this park has various tourism and community needs. These characteristics include plant diversity, recreational facilities, and design considerations that ensure that users feel comfortable and accessible to all communities (Handayani, 2019). Previous research emphasizes that the existence of RTH with facilities such as playgrounds, *jogging tracks*, and seating will bring great mental benefits. For example, research by Handayani (2019) revealed that RTHs with complete facilities tend to be visited more often by the public until the stress level decreases and the level of happiness increases. Similarly,

Wijaya (2020) also stated that the cleanliness of the city park as well as the sense of safety and aesthetics, affect how comfortable people are using the city park. RTH Kaca Mayang is one example of a unique RTH with its own characteristics and management. According to a study by Ramadhan et al. (2020), RTH Kaca Mayang in Pekanbaru is the center of local community activities, with various community events and sports activities held regularly.

Table 2. Availability of Facilities for RTH Kaca Mayang Park

NO	Park Facilities	Information	
		Exist	Not
1	Children's Playground	√	
2	<i>Jogging track</i>	√	
3	Sports Equipment	√	
4	Path	√	
5	Lighting	√	
6	Toilet	√	
7	Mosque		√
8	Garden Bench	√	
9	Trash Can	√	
10	Safety Signs	√	
11	Ornamental Plants	√	
12	Landmark	√	
13	Stops	√	
14	Aquatic Irrigation	√	
15	Economic Land	√	

Good management is also a key factor in maximizing the benefits of RTH Kaca Mayang. Research by Setiawan et al. (2019) shows that community participation in the management, maintenance, and development of RTH, such as Kaca Mayang can increase the social and ecological value of the space. Through active participation, the community not only feels that they have RTH but also ensures the sustainability and safety of existing facilities. In this case, this recreational area is very visible in Taman Kaca Mayang to promote the mental health of Pekanbaru residents. Research shows that visitors to this park feel an improvement in mood and a decrease in anxiety levels after spending time there. Facilities such as large green areas, shady trees, as well as water elements such as pools and fountains, provide a significant relaxation effect. Case studies on RTH Kaca Mayang show that good

design and maintenance can maximize the psychological benefits of green open spaces (Handayani, 2019; Wijaya, 2020).

The existence of Green Open Space (RTH) is vital in building a sustainable city. Studies show that RTH has a major effect on the mental and physical health of urban residents. For example, a study conducted by Kusumarini et al. (2015) found that various activities in parks, such as light exercise or walking, have the potential to reduce stress and depression levels in urban residents. The presence of green plants around the place of residence or workplace is also confirmed by Astuti et al. (2017) to reduce mental fatigue and increase concentration and work productivity. For this reason, in creating an environment that supports mental health and community welfare, it is very important to provide adequate facilities and infrastructure in RTH. In this context, RTH Kaca Mayang in Pekanbaru is very relevant to be used as a case study. Above is Table 2, which displays a list of facilities and infrastructure available at RTH Kaca Mayang. There are many facilities available to meet the needs of visitors and jointly maintain the quality of the environment. Some of the facilities available include a children's play area, a running track, sports equipment, walking paths, public street lighting, toilet facilities, garden benches for sitting and relaxing, well-provided trash cans, and signs. However, prayer room facilities are not available in this RTH, so it presents a shortage

The children's playground at RTH Kaca Mayang is essential because it is able to provides opportunities for children to play and get along with their age. Studies reveal that safe and well-maintained playgrounds help improve the quality of life of families as well as support children's development (Kusumarini et al., 2015). More than that, the existence of *jogging track* facilities allows visitors to exercise and take care of their body health. In addition, it can also help reduce stress levels and improve mental fitness (Astuti et al., 2017). Visitors can use various types of adequate sports equipment at RTH Kaca Mayang. This facility provides opportunities for the community to carry out various physical activities, which are not only beneficial for the health of the body but also the soul. In addition to providing comfort for pedestrians and visitors, well-planned trails also support light sports activities such as jogging. Sufficient lights in some places of RTH Kaca Mayang ensure that visitors feel safe and comfortable, especially at night. The comfort of visitors is also important, therefore, adequate toilet facilities must be provided, even though there are some that need to be improved. The widely available garden benches provide a comfortable resting place for visitors while showing attention to environmental cleanliness and aesthetics with an effective waste management system that separates organic and non-organic categories.

At this RTH Kaca Mayang, there are safety signs that indicate readiness to face emergencies and natural disasters. The signs provide directions and safe gathering points for visitors. The beauty and comfort of this RTH are further increased by the presence of ornamental plants that are cared for, while visitors will also be more interested in the typical landmarks of RTH. Although only a few respondents are satisfied with the accessibility, the Putri Kaca Mayang Bus Stop, which is connected to Trans Metro Pekanbaru, still makes it easier for visitors to access. By keeping the irrigation canals in RTH Kaca Mayang free of waste, efficient irrigation and irrigation management will prevent waterlogging in the rainy season. The presence of economic land in this RTH provides trading opportunities for the surrounding community, especially on weekends, which can improve the local economy. Although there is still room for improvement of facilities and available information, RTH Kaca Mayang has managed to provide an adequate place for the community in various

activities, thanks to the existence of various facilities. RTH Kaca Mayang has a very important role in supporting the mental health and welfare of the people of Pekanbaru City as a whole. The various existing facilities allow this place to be used as a location for recreation, sports, and help in building social relationships and improving the quality of life of the community (Astuti et al., 2017; Kusumarini et al., 2015). By improving accessibility, improving facilities, and encouraging community participation in social activities, RTH Kaca Mayang can continue to be a green park that provides a balance between modern life and nature and promotes mental health and well-being.

3.3. The Role of Kaca Mayang Green Open Space (RTH) in Improving Community Mental Health in Pekanbaru City

Green open spaces are a good place to check mental health, and there is a lot of research on the benefits of green spaces. RTH Kaca Mayang Pekanbaru City, one of the strategic and popular RTHs, has the potential to improve the mental health of the local community. The green open space of Kaca Mayang was used to investigate its role in reducing stress, improving mood, and improving the overall health of the people of Pekanbaru. A study on the influence of natural elements on the mental health of RTH Kaca Mayang users. Green open spaces can help visitors feel comfortable and safe. Sugiyanto & Kurniawan (2018) found that green open spaces were associated with significant reductions in stress and anxiety levels among those who regularly visited them. Yulianti (2020) also said that green spaces and walking or exercising are associated with more positive emotions and reduce symptoms of depression. Green spaces are an important part of mental health, especially in dense urban areas such as Pekanbaru.

Table 3. Results of the Number and Percentage of Assessment Towards Variables

Indicators	Variable	Value				
		1	2	3	4	5
Environmental Quality	Environmental Hygiene & Maintenance	4,3%	17%	31,9%	40,4%	4,3%
	Security	4,3%	12,8%	44,7%	34%	2,1%
	Availability of Facilities	2,1%	10,6%	27,7%	48,9%	8,5%
	Air Quality Cleanliness Level	0%	8,5%	40,4%	42,6%	6,4%
Accessibility	Rainwater Infiltration	2,1%	4,3%	61,7%	25,5%	4,3%
	Accessibility	0%	12,8%	27,7%	29,8%	27,7%
	Public Transportation Availability	2,1%	14,9%	17%	40,4%	23,4%

Indicators	Variable	Value				
		1	2	3	4	5
Satisfaction with Facilities	Public Facilities	2,1%	14,9%	17%	40,4%	23,4%
	Service	12,8%	29,8%	38,3%	14,9%	2,1%
	A Sense of Relaxation and Tranquility after a Visit	2,2%	8,7%	37%	37%	15,2%
Health Benefits to the Community	Stress Reduction Benefits	4,3%	6,5%	43,5%	37%	8,7%
	Stress Reduction Effectiveness	2,2%	13%	34,8%	41,3%	8,7%
	Positive Influence on Mental Well-Being	2,2%	13%	37%	41,3%	6,5%
Social Engagement	Participation in Social or Community Activities	28,3%	21,7%	39,1%	10,9%	0%
	Social Engagement with Other Visitors	8,7%	13%	56,5%	19,6%	2,2%

Based on Table 3 above, information was obtained about the role of Kaca Mayang Green Open Space (RTH) in improving people's mental health in the city of Pekanbaru; the findings show that, in general, the Kaca Mayang RTH is considered quite good in certain aspects. It was found that environmental cleanliness and maintenance, security, availability of facilities, air quality, and availability of rainwater catchment in RTH were rated positively by respondents with an average score above 65%. RTH accessibility was also rated as good, with an average score of 74.5%, indicating that respondents found it easy to reach the location, and the availability of public transportation to RTH was considered adequate. However, there are several areas that need further attention, especially related to satisfaction with public facilities such as toilets or drinking places, which received an average score of 55.5%, as well as the level of participation in social or community activities in RTH, which still needs to be improved with an average score of 53%. Even so, the majority of respondents stated that they felt more relaxed or at ease after visiting RTH Kaca Mayang, with an average score of 68.0%, and stated that RTH was effective in reducing stress levels with an

average score of 67%. In addition, respondents also felt a positive impact on their mental well-being after visiting RTH, with an average score of 67%.

Based on the results of the research conducted, there are a number of findings that provide a fairly complete picture of the role of Kaca Mayang Green Open Space (RTH) in improving the mental health of people in Pekanbaru City:

- a. **Environmental Quality:** Green Open Space (RTH) is proof of its influence in maintaining the cleanliness of the city. Good environmental quality is one of the factors that allows the effectiveness of RTH in carrying out the process. From the research that has been carried out, it is found that RTH has a great impact on the ecosystem and the success of community welfare. The involvement and involvement of the community in the management and use of Green Open Spaces (RTH) has a fairly good impact on the sustainability of these green spaces in terms of quality and benefits. Research shows that active community participation in planning, managing, and maintaining RTH can increase the ecological and social value of the space. According to Kusnoputranto (2017), community involvement in RTH management can increase understanding of the importance of nature conservation and environmental sustainability in the midst of a rapid urbanization rate. The study also shows that community participation can increase oversight of the RTH itself and reduce vandalism and abuse in facilities. Green open space (RTH) has an important role in improving the quality of the environment in urban areas and providing benefits for people's mental health. Chiesura (2004) stated that clean, well-maintained, and green open spaces can improve user experience and reduce stress. Clean and well-maintained areas create a comfortable environment and support recreational activities that are beneficial to your mental health. Although this is an earlier study, it continues to be relevant because it provides an initial conceptual framework that is still used as a reference in recent research on the social and psychological values of urban green spaces. Based on the survey results, the aspects of cleanliness and maintenance of green spaces were rated at 40.4%, indicating that most users were satisfied with this condition. This shows the potential of green spaces to improve comfort and reduce stress. In addition, the security of green spaces is also an important component that affects the level of use and benefits achieved by the community. The perception of RTH safety is essential to encourage its use by various age groups, including parents and children (Thompson et al., 2004). Adequate security allows people to feel comfortable spending time at RTH without worrying about being involved in violations or other distractions. In this study, security received a score of 3 with a percentage of 44.7%, indicating that even though security is considered quite good, there is still room for improvement to improve user security. The availability of RTH facilities is also very important to improve the quality of the environment and benefits for mental health. A study conducted by Corti et al. (2005) found that well-equipped and well-maintained facilities can increase the number of visits and customer satisfaction levels. Adequate facilities encourage more physical activity and social interaction. As a result, people's mental health and well-being improved. The results of the study showed that the availability of facilities received a score of 4, with a percentage of 48.9%. This shows that most users believe that the facilities in RTH are adequate for various activities. The level of cleanliness and air quality also affects the benefits that users feel. Nowak et al. (2006) showed that vegetation in RTH improves

air quality by absorbing pollutants and producing oxygen. Good air quality in RTH can improve user comfort and reduce the risk of respiratory diseases, especially in dense cities with high pollution. The level of cleanliness and air quality in RTH received a score of 4, with a percentage of 42.6% in this study, indicating that users felt that the air quality and cleanliness in RTH were quite good. One of the important indicators to assess the environmental quality of RTH is rainwater infiltration by vegetation and soil. According to Wong & Yu. (2005), this helps reduce flood risk and maintain the balance of local ecosystems. This function is especially important due to rapid urbanization and climate change, as land surfaces that are no longer able to absorb rainwater can cause flooding and drainage problems. In this study, rainwater infiltration got a score of 3, and the highest percentage was 61.7%. This value indicates that, although the water catchment function is considered to be quite good, there is still work that needs to be done to improve the water catchment capacity of RTH. People's mental health is affected by RTH. According to research conducted by Maas et al. (2006), access to RTH can reduce depression and anxiety among urban residents. A clean, safe, and well-equipped RTH allows people to socialize, engage in physical activity, and interact with nature, all of which improve mental health. Good air quality and adequate water catchment capabilities support healthy urban ecosystems, which enhances this positive experience.

- b. Accessibility:** Accessibility to Green Open Space (RTH) plays an important role in ensuring optimal environmental, social, and health benefits for urban communities. Previous studies have shown that the existence of easily accessible RTH in a city can have a direct impact on improving the standard of living and overall welfare of the community. According to research by Wolch et al. (2014), easy and close access to RTH is associated with increased physical activity, which in turn may reduce the risk of obesity and lifestyle-related diseases. A study by Kabisch et al. (2016) also showed that good access to RTH correlates with decreased stress levels and improved mental well-being, especially among densely populated urban populations. Easily accessible green open spaces are not only beneficial for health but also build cohesion between communities and improve community interaction. The success of Green Open Space (RTH) in urban environments depends on its level of accessibility. Research shows that good accessibility can increase user satisfaction and frequency of visits, which can have a positive impact on physical and mental health. To ensure that all levels of society can enjoy the benefits of such open spaces, the availability of public transportation that supports access to RTH is an important part of the process. Previous studies emphasized the importance of accessibility in the use of RTH. A study by Utami & Nugroho (2017) found that easily accessible RTH, both through integrated pedestrian paths and public transportation, increases the rate of community visits to RTH and encourages a variety of physical and social activities. They also found that RTH is easily accessible, more often used by the community, and becomes an important gathering place. In addition, it has been found that the availability of good and easy public transportation can help access to RTH, especially for people who do not have a private vehicle (Siregar, 2018). Good public transportation increases the number of visitors and expands the demographics of RTH users, including the elderly, children, and people with limited mobility. The RTH accessibility in this study received an average score of 4 and a percentage of 29.8%, which shows that most users feel that RTH accessibility is good enough,

although there is still room for improvement. Users feel that the easily accessible RTH allows them to visit and enjoy the available facilities more often. This is in line with the findings of Utami & Nugroho (2017), who emphasized how important accessibility is in driving the use of RTH.

Among the variables measured, the availability of public transportation received an average value of 4, with a percentage of 40.4%. This shows that the available public transportation is adequate and supports access to RTH. Users feel that good public transportation makes it easier for them to reach RTH, especially for those who do not have a private vehicle. This finding supports the claim of Siregar (2018) that good public transportation is an important component in ensuring equal access to RTH. The highest percentage given to the availability of public transportation highlights the importance of an efficient transportation system in supporting RTH accessibility. Adequate public transportation ensures that RTH is accessible to all walks of life, which in turn increases community involvement and participation in RTH. This is important in the context of rapidly growing cities, where increased accessibility through public transportation can become more difficult to find.

- c. **Facility Satisfaction:** Facility user satisfaction in Green Open Space (RTH) is an important component that affects the number of uses and benefits that the community obtains from the facility. Creating a comfortable and inviting environment for users is the result of RTH's public facilities, such as sports facilities, playgrounds, picnic areas, and walking trails. In addition, good service in the management and maintenance of RTH also contributes to user satisfaction and the sustainability of RTH operations. Previous studies have found many variables that affect facility satisfaction in RTH. For example, a study by Sutomo (2016) found that complete and high-quality public facilities can increase the frequency of visits and user satisfaction. A good place allows for a wide range of physical activities and recreation, which in turn improves the physical and mental well-being of the community. In addition, this study emphasizes that well-maintained facilities make tourist attractions safe and enjoyable. In the management of RTH, good service is also important. According to Harahap et al. (2018), quality service in the form of routine maintenance, security, and cleanliness greatly affects the user experience. Effective management ensures that public facilities remain in good condition and can be used safely by the community. Good service also includes meeting the needs and complaints of users, which results in satisfaction and increases community loyalty to RTH. The results of this study show that public facilities in RTH get an average score of 4, with a percentage of 40.4%. This shows that most users are satisfied with the facility because they feel it supports the various activities they do at RTH, such as exercising and relaxing with family. Sutomo (2016) found that the quality of facilities is the main factor in increasing user satisfaction, and the high level of satisfaction with these public facilities is in line. RTH management services received an average score of 3 and a percentage of 38.3%. This value indicates that users are quite satisfied with the service, but there is still room for improvement. Those who use the facility expect a more responsive and proactive service in maintaining the cleanliness, safety, and maintenance of the facility. This supports the claim of Harahap et al. (2018) that high-quality services are essential to improve user satisfaction and RTH sustainability. By looking at the results, the public facility variable received the highest percentage with

a value of 4 and a percentage of 40.4%, showing how important the availability and quality of public facilities are to determine the level of user satisfaction. Good public facilities improve people's physical and mental health in addition to increasing the comfort and attractiveness of RTH. Things like playgrounds, running tracks, and sports halls give people the opportunity to exercise and socialize. This can reduce stress and improve mental well-being.

- d. Community Mental Health Benefits:** The presence of biodiversity in Green Open Spaces (RTH) has been shown to contribute significantly to mental health in the community. Research shows that the use of green open spaces has a series of positive effects on human mental health, such as lowering stress levels, increasing a sense of emotional well-being, and improving attitude focus. Research conducted by Kusumarini et al. (2015) found that activities in the park, such as light exercise or walking, can be the cause of reduced stress and depression in urban communities. In general, in a city that is well organized and has large green open spaces, the mental health of its residents will also improve. Research results from Astuti et al. (2017) confirm the fact that if the room is adequately decorated with greenery, then the level of mental fatigue will decrease, thereby increasing the level of concentration and work productivity. This shows that green spaces are not only a place for fun but also for rejuvenating the mind. In this study, the data show an in-depth picture of how people perceive the mental health benefits of RTH. The results showed that stress reduction was the most prominent element, with 43.5% of respondents giving a score of 3 for this benefit and 41.3% of respondents giving a score of 4 for the effectiveness of stress reduction. A sense of relaxation and calm after the trip was also highly valued, with 37% of respondents giving scores of 3 and 4, respectively. 41.3% of respondents also gave a score of 4 for the positive influence on mental well-being. It is important to note that the variables of stress reduction effectiveness and positive influence on mental well-being each had the highest percentages in the study, at 41.3% each. These results show how important RTH is in providing a supportive environment to cope with stress and improve the mental well-being of the community as a whole. Previous studies have found that RTH can improve *mood* and mental well-being by having a positive effect on *mood* and mental well-being (Kartika, 2021). Studies in Indonesia also found that RTH helps reduce stress and improve people's quality of life through better access to open spaces and established social interaction (Lestari, 2017; Setiawan, 2019). Therefore, the results of this study not only confirm previous findings but also add further evidence about the important role of RTH in supporting people's mental health. This shows that RTH Kaca Mayang can play an effective role as an effective place to reduce stress and improve the mental well-being of its visitors. In addition, publicly owned green spaces not only provide physical therapy but also provide significant mental health benefits for the community. Relationships with nature and the green environment in green open spaces can be used as a method to reduce stress levels and improve emotional well-being, and increase social support, which will result in better mental health for both individuals and individuals. community.
- e. Social Engagement:** Community social involvement in the management and use of Green Open Spaces (RTH) has a significant impact on the sustainability, quality, and benefits of these green spaces. Research shows that active community participation in

planning, managing, and maintaining RTH can increase the ecological and social value of the space. The study also found that community participation can increase oversight of RTH and reduce vandalism and facility abuse. The importance of community involvement is also seen in efforts to strengthen social relations and community cohesion. Previous research has shown that RTH not only provides physical space for activities but also serves as a place for positive and constructive social interactions. In the end, this has a positive impact on people's mental health (Kartika, 2021). The use of the results of this study provides an in-depth picture of how the community is socially involved in RTH. The data shows that 39.1% of respondents gave a score of 3 for participation in social or community activities in RTH. This shows that almost half of the respondents see RTH as a place that supports community and social activities. This participation, although not at a very high level, remains. In addition, social engagement with others who visit RTH was rated higher, with 41.3% of respondents giving a score of 4. Among the variables analyzed, this percentage is the highest. This shows that RTH is very effective in encouraging social interaction between people. Spontaneous meetings and discussions can help reduce feelings of isolation and improve emotional well-being, according to research (Setiawan, 2019). The results show how important RTH is as a platform to strengthen social connections amid busy and isolated urban communities. Previous research has shown that RTH can serve as a place for social interaction that improves quality of life and mental well-being (Lestari, 2017). For example, a study by Suryanto et al. (2020) found that the presence of RTH can help reduce psychological distress through stronger and more positive social interactions. Therefore, RTH not only serves as the heart of the city but also as a place for social activities, which has a positive impact on people's mental health. With these findings in mind, urban planners and policymakers should consider RTH as an important component in sustainable urban design. The development and maintenance of RTH must be carried out in a way that maximizes social and psychological benefits for the community in addition to safeguarding the environment. By providing play areas, sports fields, and gathering places, RTH will play an increasingly important role in encouraging healthy and beneficial social activities. In conclusion, community social involvement plays an important role in maintaining the sustainability and social benefits of Green Open Spaces. The role and social involvement show that active community participation not only improves the quality of RTH management but also strengthens social cohesion and builds the local economy. Therefore, the promotion of community involvement in the management of RTH must continue to be encouraged as a strategy to achieve sustainable and inclusive urban development. Thus, the results of this study provide a comprehensive picture of the role of RTH Kaca Mayang in improving the mental health of the community in the city of Pekanbaru. These findings can be the basis for formulating more effective recommendations and strategies in the management and development of RTH, so that it can continue to provide maximum benefits for the health and mental well-being of the community

4. Conclusions and Recommendations

4.1 Conclusions

After analyzing the data, several main findings were found from the variables that had been measured. The environmental management of RTH Kaca Mayang plays an important role in improving the mental health of the residents of Pekanbaru City and getting a good community assessment related to its cleanliness and maintenance. Security obtained the highest rating. The highest assessment is also given to facilities based on their availability. The level of air quality cleanliness also achieved the highest assessment. Rainwater catchment received a good assessment. In terms of accessibility, the availability of public transportation and the level of ease of access are of the highest value. While public facilities received excellent ratings, services achieved the highest score in this category for providing satisfaction. After visiting, the community gave the highest assessment of the health benefits in the form of a sense of relaxation and tranquility. Stress reduction provides valuable benefits, demonstrating its effectiveness and positive impact on mental well-being. When it comes to being socially engaged, participating in social activities or communities is considered the most important. Meanwhile, showing the highest rating also involves interacting with other visitors. From this research, it was revealed that RTH Kaca Mayang plays a very important role in improving the quality of mental health and social happiness of the people of Pekanbaru City through environmental elements, facilities, and social activities that have been researched.

4.2 Recommendations

To increase the effectiveness of Kaca Mayang RTH in supporting people's mental health, here are some suggestions that can be considered:

- a) For Government:
 - Relevant governments can strengthen the mental health benefits of the community; it is necessary to increase investment in the maintenance and development of Green Open Spaces (RTH), with a focus on improving environmental quality and better accessibility.
 - The government can increase public awareness about the mental health benefits of Green Open Space (RTH) and expand education and advocacy programs.
- b) For the Community:
 - The community can be active and involved in maintaining and utilizing RTH, as well as appreciate the importance of mental health through quality outdoor activities.
 - Building an inclusive and supportive community through social activities that are connected to the use of the Green Open Space.
- c) Further Research:
 - Examine more deeply the impact of RTH on individual mental health, including in-depth analysis of stress and psychological happiness variables.
 - Develop the scope of research to include demographic factors that have the potential to influence the perception and benefits of RTH.

d) Research Limitations

- The scope of this study is limited to a single case of Kaca Mayang Green Space in Pekanbaru, which may limit the broader applicability of the findings across urban and ecological contexts.
- This study relies heavily on self-reported data obtained through questionnaires and interviews, which may introduce perceptual bias and reduce objectivity in assessing mental health outcomes.
- Temporal factors, such as seasonal variation or long-term behavioral changes associated with green space use, were not examined and may influence the consistency of the observed effects.
- This study used a cross-sectional design, thus not establishing causal inferences between green space exposure and improved mental health; future research with longitudinal or experimental designs is recommended.

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