

Utilization of GOS in Alternative Efforts in the Management of Heart Disease

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ABSTRACT

Public or private Green Open Space (GOS) is a place to carry out sports activities that can be used as an alternative to daily physical activities. Utilization of public GOS is rarely used because sports facilities and infrastructure are poorly maintained, one of which is GOS Imam Bonjol which is located in Padang City. The role of GOS in its function as the lungs of the city can reduce the occurrence of heart disease, so it is an alternative for people with heart disease in improving their quality of life by doing sports in GOS. This research is library research. Vegetation contained in GOS can provide benefits in the management of reducing risk factors for heart disease related to oxygen availability and carbon dioxide absorption. Sports carried out in GOS can guarantee the availability of oxygen needed by the body's organs. GOS is an alternative to modifying sports activities for people with heart disease.

Keywords: Green Open Space, Utilization, Oxygen Availability, Heart Disease, Sports.

INTRODUCTION

Public Green Open Space (GOS) managed by the Regencies/Cities governments is used for the benefit of the community. GOS is open land that functions for social interaction and beauty as a place for recreational, educational, or other activities¹. GOS is intended to serve residents of one city or part of a city area serving a minimum of 480,000 residents with a minimum standard of 0.3 m² each city resident, with an area of 144,000 m². Generally, GOS is equipped with recreational facilities, a playground (children/toddlers), a flower garden, a special garden (for the elderly), limited sports facilities, and a sports complex with a minimum GOS of 30%². GOS has many functions related to hydrological, ecological, health, recreation, economic, educational, and aesthetic functions. Trees through their roots help the process of absorbing water into the soil (water saving). GOS which is part of city planning is one of the efforts made by the government in fostering and developing recreational sports. Coaching is directed at putting sports into practice as an effort to develop public awareness of improving health³.

The Indonesian sports constitution explains that sports are all systematic activities to encourage, cultivate and develop physical, spiritual, and social potential. The scope of sports consists of educational sports, recreational sports, and achievement sports⁴. Recreational sports are sports carried out by the community with interests and abilities that grow and develop by the conditions and cultural values of the local community for health, fitness, joy, and social relationships. Recreational sports facilities and infrastructure can be used by the community and accessed easily by all levels of society by empowering the GOS in the area⁵.

Padang City has an area of 694.96 km² with geographical conditions bordering the sea and is surrounded by hills with an altitude of 1,853 above sea level. The Municipal Government of Padang has been developing urban forests including GOS since 1995. Based on data from the

Environmental Office of the Parks section of Padang City, the area of GOS and parks is 70.495 m². According to the Regional Regulation of Padang City No. 4/2013 concerning the regional plan of Padang City, it explains that it will develop sports facilities that are easily accessible, strategic, safe, and comfortable and the development of GOS that is integrated with sports and recreation facilities for any development of the housing area that is built.

One of the GOS that have been managed by Padang City is Imam Bonjol GOS which is located on Imam Bonjol Padang with a land area of 45,000 m². Observations of researchers on sports facilities contained in the GOS are soccer fields, volleyball courts, and jogging tracks. The exercise is generally carried out in the morning, afternoon, and on Saturdays and Sundays. It is estimated that per day the number of visits reaches 50-100 people. Various reasons cause the use of city parks as sports facilities, including the discomfort of the community towards GOS. The purpose of this study was to determine the level of satisfaction of sports visitors to GOS Imam Bonjol Padang.

The results showed the following; 1) The total area of GOS availability in Padang City is only 2463.62 Ha or based on a percentage of 3.54%, meaning that the availability of GOS in Padang City is not sufficient, namely 2463.62 Ha or 3.54% of the total area of Padang City. This number is not by the statutory regulations which oblige every region to have a GOS of 30% of the city area; 2) Based on the map of the distribution of GOS locations in Padang City, there are 5 districts of the research location, namely West Padang with 15 park points, Padang Utara with 9 park points, East Padang with 10 park points, South Padang with 4 park points, and Nanggalo with 1 park point. The distribution of GOS is not evenly distributed, there are still many sub-districts that do not have GOS, especially public GOS¹.

The existence of sports facilities and infrastructure in the Imam Bonjol Padang GOS makes the people around the area able to carry out sports activities. This makes Imam Bonjol GOS one of the most visited GOS in Padang City to carry out recreational sports activities. This utilization should also be seen from the perceptions of the people who use these facilities and infrastructure in maintaining and maintaining them. The problem that arises is that only on school holidays or holidays the Imam Bonjol Padang GOS office is crowded with sports participants, namely Saturdays and Sundays. So that the function of sports in nourishing the body is not by the principles of exercise in exercising.

METHODS

This research is a type of library research by records all findings regarding GOS in general in each research GOS discussion found in the literature and sources, and/or the latest findings regarding the use for degenerative diseases. Integrating all findings, both theory and new findings on the improvement of degenerative diseases⁶.

RESULT

Research by⁷ found that in New Zealand, increased environmental greenery was associated with a lower risk of poor mental health and cardiovascular disease at the individual level, but not associated with being overweight or poor general health. Overall levels of physical activity were also higher among residents of greener environments, but only partly explains the relationship between green spaces and health. Although the environmental drivers of physical activity will vary by type, a better understanding of the determinants of overall physical activity levels can

help inform a whole population's approach to increasing levels of physical activity. In New Zealand, these findings suggest that greener environments are likely to be favorable for physical activity and population-level health.

This research is in line with research conducted by¹⁸ which found that urbanization and the increasing increase in obesogenic environments create health and well-being challenges for urban environmental planning and design. Simultaneously, green spaces in cities are increasingly seen as providing locations for restorative contact 'with nature, physical activity, and social engagement, which is evidence of a positive influence on wellbeing and triggering behavioral changes towards healthy lifestyles.

Healthy exercise can be done by utilizing GOS because GOS has a very vital function for environmental sustainability⁹. GOS is provided to create a beautiful and comfortable atmosphere while at the same time producing oxygen and absorbing carbon dioxide in the surrounding environment. In GOS 1 adult trees can produce as much as 20.4 kg of oxygen/day, while humans need 0.84 kg of oxygen/day. In addition, trees can absorb as much as 28.2 kg of carbon dioxide/day, while humans produce carbon dioxide as much as 0.48 kg/day. This shows the importance of GOS as a supplier of oxygen for humans and to absorb existing carbon dioxide emissions¹⁰.

Research conducted by¹¹ found that being in large cities with more green space can lead to a reduced risk of cardiovascular disease. Associations were maintained for participants over 40, male and female, and high and low-income groups. Research by¹² was undertaken to investigate the effects of increasing green space use and area-level changes in green space coverage. These findings support the importance of urban planning policies that improve green infrastructure and green space coverage in urban areas, in terms of preventing heart disease.

This is also in line with¹² that several large epidemiological studies have found a strong relationship between greenness and the risk of cardiovascular disease (CVD). These studies report that close residential distance to greenery is associated with reduced cardiovascular mortality as well as adverse cardiovascular events. Although the mechanisms underlying this relationship are not well understood, the beneficial health effects of greenness have been linked to its ability to relieve stress, reduce air pollution, and encourage physical activity. residential greening can also improve access to healthy goods and services, as well as social interactions. Research on the health impacts of greenness can provide new insights into the environmental determinants of CVD risk and can inform the development of green nestable-based strategies to prevent CVD and its clinical manifestations¹³.

Healthy living is the hope and desire of every normal human being, not only statically healthy but also dynamically healthy. A healthy lifestyle is synonymous with sports or physical fitness. Physical fitness efforts are health efforts that utilize physical activity to improve health status. Physical activity or sports are part of the basic needs in everyday life, especially improving the level of health is part of the necessities of life. However, with the improvement and development in today's technological world, it is easier for all activities to cause us to be less mobile (low body movement) or often referred to as hypokinetic, such as the use of remote controls, computers,

lifts, escalators, transportation, and other sophisticated equipment without being balanced with physical activity¹².

The advancement of the world of technology today is not the only factor that affects the occurrence of hypokinetic symptoms, the problem of time, cost, and technique is often the reason someone is lazy to do physical activity or a series of sports. In addition, the sedentary lifestyle also supports the occurrence of hypokinetic symptoms and has the potential for the emergence of various diseases. Hypokinetics can cause symptoms and the onset of non-communicable or degenerative diseases, such as overweight, obesity, diabetes, cholesterol, hypertension, colon cancer, anxiety, depression, osteoporosis, and also the risk of heart disease (cardiovascular) which is the number one cause of death in the world¹⁴. Degenerative diseases can be prevented by getting used to a healthy lifestyle. Health is one of the most important elements of the quality of life in national development to make Indonesian people completely healthy. Sports Health is a health effort that utilizes physical activity as a basic necessity in daily life because it can improve the fitness needed to carry out its duties¹⁴. To create a healthy city and citizens, of course, there must be healthy city lungs (GOS). GOS can be an open space for all residents to exercise, play, and recreate for free.

Sport is a physical activity carried out by humans in an effort so that the body and mind can be fresher and can make the human body healthier sport can also be said to be an active life because active life is something that almost everyone experienced before humans reached the benefits of industrial modernization. Active living is a magnet that attracts several habits which, when seen one by one, are too simple to judge. However, collectively, these habits are the main hope for personal health and vitality and even for the integration of the nation's health surveillance system.

A rehabilitative physical exercise program for people with heart problems aims to optimize the physical capacity of the body, provide counseling to patients and families in preventing worsening and help patients to return to physical activities like before experiencing heart problems. The benefits of physical exercise in people with heart problems, namely reducing the physiological and psychological side effects of bed rest in the hospital, can be used to monitor the patient's physiological condition and speed up the recovery process and the ability to return to the level¹⁵.

CONCLUSION

The existence of GOS as mandated in the law has a role and function in maintaining the health of individuals and society. So that the planting of vegetation and its maintenance is very important. This is closely related to the maintenance of the quality of life of people with heart disease who need comfort in doing sports activities in open spaces as a modification in physical exercise in efforts to treat heart disease.

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