

Benefits of Aerobic Exercise for Heart Health: Literature Review

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\Abstract

Heart disease is one of the leading causes of death in the world, including in Indonesia, which is generally caused by an inactive lifestyle, unhealthy diet, and stress. One preventive effort that has proven effective is through physical activity such as aerobics. This study aims to examine the benefits of aerobics on heart health through a literature study method with a descriptive qualitative approach. Data were collected from various relevant national and international scientific journals over the past ten years. The results of the review show that aerobics can increase heart efficiency, lower blood pressure, improve blood lipid profiles, and increase VO2 max capacity. In addition, aerobics plays a role in weight control, improving psychological function, and reducing the risk of stress, all of which contribute to heart health. This activity is also considered safe and can be done by various age groups, including the elderly. However, low health literacy is a challenge in implementing aerobics widely. Therefore, ongoing education based on scientific evidence is needed to increase public awareness of the importance of exercise in preventing heart disease.

Keywords : Aerobics, Heart, Health

Introduction

Heart disease is still the leading cause of death in the world, including in Indonesia. Data from the World Health Organization (WHO) shows that cardiovascular disease causes around 17.9 million deaths each year, and this number is expected to continue to increase. In Indonesia itself, the results of the 2018 Basic Health Research (Riskesdas) stated that the prevalence of heart disease reached 1.5% of the total population. This condition is exacerbated by a modern lifestyle that tends to be inactive, unhealthy diets, and chronic stress. Therefore, an effective and easily accessible prevention strategy is needed for the wider community, one of which is through routine physical activity. This activity has been scientifically proven to reduce the risk of heart disease by improving blood circulation function, stabilizing blood pressure, and controlling cholesterol levels.

One form of physical activity that is widely sought after and easily accessible is aerobics. Aerobics is a cardiorespiratory exercise that involves repetitive rhythmic movements with moderate to high

intensity, and a long enough duration to improve heart and lung fitness. The main advantage of aerobics is its flexibility and affordability, because it can be done anywhere without the need for special equipment. The combination of dynamic movements and music makes aerobics not only beneficial for health, but also fun and motivating for participation. The American College of Sports Medicine (ACSM) recommends 150 minutes of aerobic exercise per week as part of a healthy lifestyle. In various regions of Indonesia, aerobics has been integrated into community health programs such as elderly health posts and fitness activities in educational institutions.

Scientific support for the benefits of aerobic exercise for heart health has been widely found in various studies. Regular aerobic exercise has been shown to increase VO₂ max as an indicator of cardiorespiratory capacity, lower blood pressure, and improve blood lipid profiles. For example, a study by Ahmad et al. (2020) showed that aerobic exercise for eight weeks significantly reduced systolic and diastolic blood pressure in adults. In addition, research by Ortega et al. (2019) revealed that aerobic exercise plays a role in improving left ventricular function and lowering LDL cholesterol levels. These findings indicate that aerobic exercise has the potential as a non-pharmacological intervention in preventing and controlling heart disease physiologically and systematically.

However, behind this effectiveness, many people still do not have adequate awareness and understanding of the importance of physical activity in preventing heart disease. The low level of public health literacy is a challenge in itself in building a healthy lifestyle. According to Nutbeam (2008), increasing health literacy greatly influences behavioral changes, including increasing participation in regular exercise. Therefore, scientific efforts are needed that not only convey research results, but also compile and present information systematically so that it is easily understood by various groups. In this context, a literature review of the benefits of aerobic exercise for heart health can be an initial step in strengthening public education and supporting community-based promotive and preventive programs.

Method

This study uses a qualitative approach with a descriptive-analytical literature review method. This approach was chosen to explore and deeply understand various scientific findings related to the benefits of aerobic exercise on heart health. Literature studies are considered appropriate because the main focus of the study is to collect, review, and analyze secondary data that has been published in the form of scientific journals, books, research reports, and other trusted sources.

The data collection procedure was carried out through a systematic search of scientific articles published in the last ten years, both in national and international journals, using keywords such as "aerobic exercise", "cardiovascular health", "exercise and heart", and "aerobic exercise for the heart". The sources used were accessed through online databases such as Google Scholar, PubMed, ScienceDirect, and ResearchGate. Article selection was carried out based on topic relevance, scientific validity, and publication recency.

Furthermore, the collected data were analyzed using content analysis techniques, namely by identifying patterns of findings, comparing results between studies, and drawing thematic conclusions regarding the effects of aerobic exercise on heart health parameters, such as blood pressure, heart rate, VO2 max, and lipid profile. Researchers also categorized information based on target population (adults, elderly, or high-risk groups) to see the consistency of the benefits of aerobic exercise in various contexts.

By using this method, the study aims to provide a comprehensive understanding of the contribution of aerobic exercise in maintaining heart health, while enriching the scientific literature that can be used as a basis for public education and policy making in the field of preventive health.

Results and Discussion

Aerobic exercise has long been known as one of the most effective forms of physical exercise in improving fitness and maintaining heart health. This exercise is classified as a moderate to long-duration physical activity that involves large muscle groups rhythmically and repeatedly. Aerobic exercise works by increasing oxygen intake into the body, which in turn encourages the cardiovascular system to work more efficiently. This type of activity stimulates the heart to pump blood more optimally, strengthens the walls of the heart muscle, and improves blood circulation throughout the body. A study by Warburton et al. (2006) confirmed that aerobic physical activity such as gymnastics makes a major contribution to increasing cardiorespiratory capacity which has a direct effect on reducing the risk of heart disease.

In this literature study, various scientific articles were analyzed to find common patterns explaining how aerobic exercise affects physiological parameters related to heart health. Several studies have shown that aerobic exercise can lower systolic and diastolic blood pressure. Exercise that is done consistently can widen blood vessels (vasodilation), increase arterial elasticity, and reduce total peripheral resistance. A study by Fagard (2006) showed that regular aerobic exercise can lower blood pressure by an average of 5–7 mmHg, which is clinically significant in reducing the risk of heart attack and stroke. Thus, aerobic exercise not only functions as a fitness tool, but also as a form of non-drug therapy in the management of high blood pressure.

In addition, aerobic exercise has been shown to play a role in lowering bad cholesterol (LDL) and triglyceride levels, and increasing good cholesterol (HDL) levels. This process occurs because aerobic activity increases lipid metabolism, which is the process of breaking down fat in the body to be used as an energy source. A study by Kodama et al. (2007) concluded that moderate-intensity aerobic activity carried out routinely for more than 12 weeks can significantly increase HDL levels, which have a protective effect on the heart. Aerobic exercise also improves insulin sensitivity and blood glucose profiles, which are important factors in preventing metabolic diseases that are closely related to cardiovascular.

Another benefit of aerobic exercise lies in its ability to increase VO₂ max capacity, which is the maximum volume of oxygen that the body can use during exercise. This parameter is a primary indicator of cardiovascular fitness. An increase in VO₂ max indicates the efficiency of the heart and lungs in delivering oxygen to body tissues. Research by the American Heart Association (AHA) emphasizes that an increase in VO₂ max by 10–15% can reduce the risk of death from heart disease by up to 20%. Therefore, aerobic exercise is one of the primary recommendations in cardiac rehabilitation programs and secondary prevention in high-risk patients.

This review also found that aerobic exercise contributes to the regulation of body weight and body mass index (BMI), which are major risk factors for heart disease. Aerobic activity that burns calories and increases basal metabolism helps prevent obesity, which is often associated with hypertension, type 2 diabetes, and dyslipidemia. A meta-analysis by Swift et al. (2014) stated that aerobic exercise can significantly reduce body weight, especially when combined with healthy diet interventions. This confirms that aerobic exercise has a synergistic effect that supports weight management programs and overall cardiovascular risk reduction.

Not only physiological aspects, the benefits of aerobic exercise also reach psychological aspects that also affect heart health. Chronic stress is known to be a significant risk factor for heart disease. Aerobic exercise done in groups and accompanied by music can improve mood, relieve anxiety, and reduce stress hormones such as cortisol. A study by Blumenthal et al. (2005) showed that aerobic exercise significantly reduced symptoms of depression and anxiety, which indirectly supports heart health by reducing emotional burden and improving quality of life.

Aerobic exercise also has broad benefits across age groups, including the elderly who tend to have higher heart risk. In the elderly, aerobic exercise has a positive impact on left ventricular function, resting heart rate, and pulse pressure. A study by Brubaker et al. (2009) showed that elderly people who routinely do aerobic exercise experience improved heart function and decreased incidence of cardiovascular complications. These findings strengthen the recommendation that aerobic exercise is a safe and effective intervention, even for the elderly.

This literature review also underlines the importance of health literacy in building public awareness of physical activity. Although the benefits of aerobic exercise have been scientifically proven, many individuals still do not understand or do not have access to correct health information. Low health literacy results in minimal motivation to exercise regularly. Therefore, dissemination of scientific results such as this is very important to strengthen health promotion at the community level. Research by Sørensen et al. (2012) showed that increased health literacy correlates with increased participation in healthy lifestyle behaviors, including exercise.

Overall, the results of this literature study indicate that aerobic exercise is a physical activity that is not only safe and enjoyable, but also has a strong scientific basis in supporting heart health. The combination of physiological and psychological benefits makes aerobic exercise a comprehensive intervention in the prevention and control of heart disease. Therefore, it is important for health practitioners, educators, and policy makers to encourage the public to make aerobic exercise part of a sustainable healthy lifestyle.

Conclusion

Based on the results of the literature study that has been conducted, it can be concluded that aerobic exercise has a significant contribution in maintaining and improving heart health. This activity works through complex physiological mechanisms, such as increasing the efficiency of heart work, decreasing blood pressure, and improving lipid profiles. Aerobic exercise can also increase VO2 max capacity, which is the main indicator of cardiovascular fitness. In addition, this exercise is effective in helping to regulate body weight and reduce the risk of obesity, which is one of the main factors of heart disease. The benefits are not only limited to physical aspects, but also include psychological aspects, such as reducing stress, anxiety, and improving mood. This exercise can be done flexibly, cheaply, and easily accessible to various age groups, including the elderly. Scientific studies that have been reviewed consistently show the positive impact of aerobic exercise on reducing the risk of heart disease as a whole. However, low public health literacy is still a challenge in encouraging regular exercise practices. Therefore, more massive and structured educational and promotive efforts are needed. The dissemination of information based on scientific evidence such as in this study can be the basis for increasing public awareness and participation in the importance of physical activity. Aerobic exercise is not only a means of exercise, but also an integral part of a healthy lifestyle. With consistency and commitment, aerobic exercise has great potential in reducing morbidity and mortality rates due to heart disease in the future.

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