

Walking as a Modality for Enhancing Physical Fitness : A Review

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ABSTRAK

Abstrak: Berjalan kaki berperan penting dalam menjaga kebugaran jasmani yang krusial bagi kesehatan. Kebugaran jasmani terdiri atas dua komponen utama, yaitu kesehatan dan keterampilan. Kebugaran umumnya diukur melalui penilaian daya tahan kardiorespirasi, kekuatan otot, kelenturan, dan komposisi tubuh. Tinjauan ini melakukan penelusuran literatur komprehensif menggunakan publikasi terkemuka seperti Elsevier, PubMed, dan sumber relevan lainnya. Penelusuran ini berfokus pada penelitian yang telah melalui telaah sejawat mengenai dampak berjalan kaki terhadap kebugaran. Banyak penelitian menunjukkan bahwa berjalan kaki adalah olahraga sederhana dan mudah diakses, serta memberikan manfaat signifikan, seperti peningkatan daya tahan kardiorespirasi, kekuatan otot, dan kelenturan. Disarankan berjalan kaki 150 menit per minggu guna memperoleh manfaat optimal. Untuk memaksimalkan manfaatnya, diperlukan postur tubuh yang benar dan teknik pernapasan baik. Selain manfaat fisik, berjalan kaki juga meningkatkan kesejahteraan mental dan sosial. Aktifitas ini fleksibel dan sesuai untuk berbagai kelompok usia, termasuk individu dengan kondisi kesehatan tertentu. Memahami hubungan antara berjalan kaki dan kebugaran membantu masyarakat mengintegrasikan aktivitas ini guna meningkatkan kesehatan. Penelitian di masa depan dapat berfokus pada aspek kebugaran tertentu untuk mengembangkan pedoman yang lebih tepat bagi berbagai kelompok masyarakat.

Kata kunci: berjalan kaki, olahraga, kebugaran, aktivitas aerobik, kesehatan

ABSTRACT

Abstract: Walking plays a key role in maintaining overall physical fitness which is essential for good health. Physical fitness consists of two main aspects health-related and skill-related components. It is commonly measured by assessing cardiovascular endurance muscle strength muscle endurance flexibility and body composition. This review conducted a comprehensive literature search using reputable publications such as Elsevier, PubMed, PubMed Central, and other relevant sources. The search focused on peer-reviewed studies that examine the effects of walking on physical fitness. Many studies highlight walking as a simple and accessible form of exercise that offers significant benefits such as improved cardiovascular endurance muscle strength and flexibility. It is recommended to engage in at least 150 minutes of walking each week for optimal benefits. To maximize walking's impact on fitness it is crucial to maintain good posture and proper breathing techniques. In addition to physical benefits walking also promotes mental and social well-being. It is a versatile activity suitable for all ages including adolescents, adults, children, seniors and individuals with specific health conditions or diseases. By understanding the connection between walking and fitness people can incorporate it into their daily routines to enhance overall health. Future research could focus on specific fitness aspects related to walking to develop personalized guidelines for different populations.

Keywords: walk, exercise, fitness, aerobic activity, health

I. PENDAHULUAN

1. Latar Belakang

Physical fitness is an integral aspect of maintaining individual health. Maintaining a level of body fitness has a positive impact on overall well-being. Physical activity is a key factor in supporting and enhancing this level of fitness. Studies show that a regular physical activity routine can reduce the risk of chronic diseases, improve cardiorespiratory function, and enhance mental health. (Chen & Hsieh, 2022) Physical activity can vary widely, but one of the most accessible forms for many is walking. Walking is a simple exercise that can easily be integrated into daily routines without the need for special equipment. The sustainability of walking can provide significant benefits for individuals looking to improve their fitness. (Monte, 2021). Recognizing the importance of fitness for individual health, physical activity is acknowledged as a primary pillar of maintaining a healthy lifestyle. The World Health Organization (WHO, 2019) recommends at least 150 minutes of moderate physical activity per week to maintain body health. In this context, walking emerges as a viable option, as it not only meets daily physical activity recommendations but also offers additional benefits such as improved cardiorespiratory endurance, weight management, and reduced cardiovascular disease risk. (Pratt, 2021). Thus, gaining a deeper understanding of the relationship between walking and fitness becomes essential. This review aims to provide information on the role of walking in fitness components by examining various reliable studies from sources such as Elsevier, PubMed, PubMed Central and other relevant publications. Physical fitness is a concept that encompasses the body's ability to perform physical activities without excessive fatigue. The benefits of fitness extend beyond physical aspects; they also encompass mental and social health. Physical activity has been shown to alleviate stress, enhance mood, and reduce depression risk. Socially, fitness activities often involve social interaction, whether through group fitness classes or other group activities, which can enhance social and mental well-being. (Mahindru et al., 2023). Physical fitness can be divided into two main categories: health-related fitness and skill-related fitness. (Kapoor et al., 2022) Health-related fitness refers to the body's capacity to carry out daily activities without incurring injury or chronic disease risk. (Avijit & Amit, 2023) On the other hand, skill-related fitness pertains to the ability to perform specific tasks with a high level of proficiency. (Davis, 2019) Health-related fitness includes components such as cardiorespiratory endurance, muscular strength, muscular endurance, flexibility, and body composition. Cardiorespiratory endurance reflects the heart and lungs' ability to supply oxygen throughout the body during physical activity. Muscular strength and endurance help support daily activities and prevent injuries. Flexibility is the ability of joints to move freely, while body composition includes the ratio of fat to muscle mass, both of which play important roles in overall body health. (Voichun et al., 2023). Skill-related fitness encompasses components such as speed, balance, coordination, reaction time, and power. Speed is defined as the ability to move quickly, while balance and coordination are critical for maintaining stability and effectively synchronizing body movements. Reaction time measures the rapidity with which an individual can respond to a specific stimulus, and power refers to the capacity to exert force at a high level of proficiency. (Garcia-Hermoso, 2023) Both health-related fitness and skill-related fitness are interdependent, contributing to a comprehensive understanding of overall physical fitness. The enhancement of health-related components supports the functionality of various organ systems, while the improvement of skill-related attributes can optimize performance in specific physical activities. These types of fitness have significant impacts on individual health. Health-related fitness helps improve cardiorespiratory endurance, which is a vital indicator of heart and lung health. Moreover, good muscle strength and endurance support efficient muscle function and reduce injury

risk. Flexibility provides adequate range of motion, while balanced body composition can decrease obesity risk. (Bayles, 2023; Britton et al., 2020) By fostering an understanding of and engagement with both types of fitness, individuals can achieve optimal health outcomes and enhanced performance in diverse physical activities and sports contexts. (Voichun et al., 2023; Garcia-Hermoso, 2023).

2. Perumusan Masalah

The sustainability of walking can provide significant benefits for individuals looking to improve their fitness. (Monte, 2021). Recognizing the importance of fitness for individual health, physical activity is acknowledged as a primary pillar of maintaining a healthy lifestyle. The World Health Organization (WHO, 2019) recommends at least 150 minutes of moderate physical activity per week to maintain body health. In this context, walking emerges as a viable option, as it not only meets daily physical activity recommendations but also offers additional benefits such as improved cardiorespiratory endurance, weight management, and reduced cardiovascular disease risk.

3. Tujuan Penelitian

The search focused on peer-reviewed studies that examine the effects of walking on physical fitness. Many studies highlight walking as a simple and accessible form of exercise that offers significant benefits such as improved cardiovascular endurance muscle strength and flexibility. This review aims to provide information on the role of walking in fitness components by examining various reliable studies from sources such as Elsevier, PubMed, PubMed Central and other relevant publications.

4. Manfaat Penelitian

One of the primary assessment methods is cardiorespiratory endurance testing, which may involve activities such as distance running, ergometer cycling, or treadmill exercises, all designed to measure the efficiency of the cardiovascular and respiratory systems during physical exertion. However, a comprehensive evaluation of fitness must consider demographic factors such as age and gender. These factors are crucial, as fitness standards are adjusted to reflect the physiological changes that individuals experience throughout their lifespan. For instance, differences in muscle mass, hormonal levels, and aerobic capacity can vary significantly between males and females, necessitating distinct benchmarks for each group. (Bayles, 2010). Assessing cardiorespiratory endurance provides insight into the efficiency of the heart and lungs in supplying oxygen throughout the body during physical activity, with maximal oxygen consumption (VO_2 max) generally used as a criterion. The "V" in VO_2 max stands for volume, while "O₂" stands for oxygen.

II. METODE PENELITIAN

According to WHO recommendations, at least 150 minutes of walking activity per week is beneficial. This aerobic activity can be divided into 30-minute sessions over five days, keeping heart rate in mind. If heart rate increases to 70%, it indicates good outcomes, but adjustments may be necessary based on physical conditions prior to starting an exercise regimen, particularly for seniors. (WHO, 2019). Various studies show that walking for as little as 10 minutes can lead to measurable improvements in health-related fitness. Walking has also been found to enhance sleep quality. A study by Wang and Boros (2020) examined healthy adults aged 19 to 36 who participated in a pedometer-based aerobic intervention, concluding that daily walking exercises significantly improved sleep quality and its components. Outdoor walking in fresh air is often recommended although various factors can occasionally impede this activity. Therefore, alternative aerobic exercises that provide comparable physiological benefits to walking should be considered such as utilizing a treadmill or stationary bicycle. The recommended walking speed is approximately 5-6 kilometres per hour, classified as brisk walking. (Yuliatin & Noor),

2012) For beginners or those with specific physical conditions walking at a comfortable speed is essential. Steps per minute can measure speed and daily step targets can motivate consistent walking. To achieve optimal benefits from walking for fitness, attention must be paid to good posture. Standing upright is essential for maintaining proper body alignment during walking. Good posture involves aligning the head, shoulders, hips, and feet in a straight line. Keeping the spine straight and avoiding slouching or leaning forward can help maintain balance and stability while walking. Engaging core muscles and keeping shoulders relaxed also contribute to proper walking posture. Choosing comfortable and suitable footwear enhances walking's effectiveness for fitness. (Furkan et al., 2021) Effective breathing processes are also crucial during walking. When walking for fitness, focusing on diaphragmatic breathing, or abdominal breathing, is advisable. Diaphragmatic breathing involves deep inhalation into the abdomen, allowing the diaphragm to fully expand and contract. (McKeown, 2015) To practice diaphragmatic breathing while walking, inhale deeply through the nose, allowing the abdomen to rise, and exhale completely through the mouth, allowing the abdomen to fall. It is essential to maintain a steady and rhythmic breathing pattern throughout the walk, avoiding shallow or rapid breaths. By practicing diaphragmatic breathing while walking, individuals can increase oxygen intake, enhance relaxation, and support core stability. Breathing exercises can also be applied during warm-up and cool-down sessions of each walking routine. (Jansang & Eksakulka, 2023). In addition to consistent exercise selection, adequate nutrition, hydration, and sufficient rest are necessary for supporting optimal fitness routines.

III. HASIL DAN PEMBAHASAN

Walking has been shown to have positive effects on aerobic endurance measurements. Aerobic endurance is the ability of the cardiovascular and respiratory systems to supply oxygen to muscles over an extended period. A study by Jakatama and Wahyudati (2017) involving obese adolescents in a 10,000-step walking program showed improvements in cardiorespiratory endurance as measured by VO_2 max after a 6-week intervention. Interval training involving periods of high intensity followed by brief rest can improve VO_2 max. For example, brisk walking for several minutes, then walking at a slower pace, and returning to brisk walking. Larose et al. (2025) found that walking programs, whether supervised or unsupervised, improved cardiorespiratory fitness in older adults with knee osteoarthritis. Campana and Costa (2017) compared walking with and without handheld weights and discovered that weighted walking did not significantly increase energy expenditure or cardiorespiratory response compared to normal walking. Even in past studies, Hartung et al. (1977) highlighted those longer durations of exercise, specifically 15 to 25 minutes, are necessary for optimal endurance improvements in treadmill walking. Murtagh et al. (2015) stated that walking interventions improved aerobic capacity by 3.04 ml/kg/min. Collectively, these studies demonstrate the effectiveness of walking in enhancing aerobic endurance, making it a practical and accessible exercise option for various populations. Walking has also been linked to improvements in muscle strength and body flexibility. (Selanon & Chuangchai, 2023) While it may not be as intensive as resistance training, walking engages major muscle groups, including the quadriceps, hamstrings, calves, and glutes. Incorporating varied terrains, such as inclines or uneven surfaces, can further enhance muscular engagement and challenge muscle groups differently. This variation can lead to improvements in functional strength, allowing individuals to perform daily activities with greater ease and reduced risk of injury. Walking combined with intervals of jogging or faster-paced walking can further enhance these benefits. A consistent walking routine contributes to muscle strength development,

promotes endurance, and improves joint mobility particularly in the lower body. (Beck & Cho, 2023) In older adults, walking has been shown to improve aerobic endurance, lower body strength, static balance, as well as dynamic balance and agility. In older adults, walking has been shown to improve both static and dynamic balance, as well as agility. (Iri et al., 2010) In addition to increasing VO_2 max in a study involving older men, walking exercise also reduced their LDL (low-density lipoprotein) cholesterol and body fat. (Paillard et al., 2002) A study conducted in elementary school children showed similar results with decreases in BMI and improvements in physical fitness. (Kim et al., 2012) Regular walking can help create a caloric deficit, essential for weight loss and maintenance. Moreover, the combination of walking and proper dietary habits amplifies the effects on body composition. Maintaining a healthy balance of macronutrients while increasing physical activity supports overall health and fitness goals. Walking serves as an effective tool for individuals aiming to achieve and maintain a healthy body composition. Walking is also recommended as a form of exercise for individuals recovering from a stroke to enhance their fitness levels post-illness. (Lloyd et al., 2018) Physical fitness training has proven beneficial for non-ambulatory stroke patients, including improvements in fat mass, peak heart rate, peak oxygen uptake, walking endurance, maximum walking speed, mobility, balance, and independence. (Floel et al., 2014) Additionally, early physical fitness training after a stroke can lead to improvements in walking speed and daily living activities. However, in certain other conditions where walking is not feasible, recommended exercises may focus on physiotherapy regimens, which generally require additional assistive devices or should be performed in adequate facilities before transitioning to home-based activities. (Marsden et al., 2016). Walking has also been found to enhance sleep quality. A study by Wang and Boros (2020) examined healthy adults aged 19 to 36 who participated in a pedometer-based aerobic intervention, concluding that daily walking exercises significantly improved sleep quality and its components. Outdoor walking in fresh air is often recommended although various factors can occasionally impede this activity. Therefore, alternative aerobic exercises that provide comparable physiological benefits to walking should be considered such as utilizing a treadmill or stationary bicycle. The recommended walking speed is approximately 5-6 kilometres per hour, classified as brisk walking. (Yuliatin & Noor), 2012) For beginners or those with specific physical conditions walking at a comfortable speed is essential. Steps per minute can measure speed and daily step targets can motivate consistent walking. To achieve optimal benefits from walking for fitness, attention must be paid to good posture. Standing upright is essential for maintaining proper body alignment during walking. Good posture involves aligning the head, shoulders, hips, and feet in a straight line. Keeping the spine straight and avoiding slouching or leaning forward can help maintain balance and stability while walking. Engaging core muscles and keeping shoulders relaxed also contribute to proper walking posture. Choosing comfortable and suitable footwear enhances walking's effectiveness for fitness. (Furkan et al., 2021) Effective breathing processes are also crucial during walking. When walking for fitness, focusing on diaphragmatic breathing, or abdominal breathing, is advisable. Diaphragmatic breathing involves deep inhalation into the abdomen, allowing the diaphragm to fully expand and contract. (McKeown, 2015) To practice diaphragmatic breathing while walking, inhale deeply through the nose, allowing the abdomen to rise, and exhale completely through the mouth, allowing the abdomen to fall. It is essential to maintain a steady and rhythmic breathing pattern throughout the walk, avoiding shallow or rapid breaths. By practicing diaphragmatic breathing while walking, individuals can increase oxygen intake, enhance relaxation, and support core stability. Breathing exercises can also be applied during warm-up and cool-down sessions of each walking routine. (Jansang & Eksakulkla, 2023). In addition to consistent exercise selection,

adequate nutrition, hydration, and sufficient rest are necessary for supporting optimal fitness routines.

IV. KESIMPULAN

In conclusion, walking is recognized as an effective and accessible form of exercise that yields substantial benefits for individuals across various age groups and fitness levels. This rhythmic aerobic activity has been shown to significantly enhance multiple components of health-related fitness, including cardiorespiratory endurance, muscular strength, flexibility, and body composition. Empirical studies indicate that walking contributes to improvements in VO_2 max, reductions in LDL cholesterol levels, and decreases in body fat percentage, as well as enhancements in static and dynamic balance and agility, particularly among older adults and children. Furthermore, walking plays a critical role in rehabilitation protocols, especially for individuals recovering from certain diseases such as stroke, facilitating improvements in mobility, physical strength, and overall independence. The versatility of walking allows for its implementation in diverse settings, whether outdoors or via treadmills, and enables adaptation to meet individual health requirements. Given the extensive body of evidence supporting the effectiveness of walking, it is imperative to advocate for its inclusion as a fundamental component of public health initiatives and personal fitness regimens. Promoting walking as a primary physical activity can enhance health outcomes, prevent chronic diseases, and contribute to the overall well-being of populations throughout their lifespan.

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Accepted Date	Revised Date	Decided Date	Accepted to Publish
05 Maret 2025	10 Maret 2025	18 Maret 2025	Ya