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The Reciprocal Relationship Between Health and Sports in Physical Fitness

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ABSTRACT
This literature review aims to understand the reciprocal relationship between health and sports in physical fitness. Fitness Fitness is a very important indicator of health for a person. Fitness is related to a person's physical ability and capability to carry out daily activities efficiently and effectively in a relatively long time without causing significant fatigue, in addition to still having energy reserves to carry out other activities. In the physical aspect, the scope of sports health plays a very clear role, because this aspect is the beginning of all forms of training. From the physical aspect, a coach or teacher can analyze and find out from the growth and development of an athlete, analyze the anatomy of the body so that the coach or teacher can guess the development of the athlete in its branches. In the spiritual aspect, it is very closely related to the self-confidence factor. This is also related to sports psychology, sports pedagogy, and sports sociology. While the environmental aspect greatly influences the development of athletes. The scope of sports health is closely related to the environmental aspect. This aspect can appear in athletes when they are stimulated by their environment.

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INTRODUCTION

Humans move and exercise to live, because movement is essentially a necessity of life. Movement itself is truly a characteristic of life. Humans move with various motives to exercise to maintain and improve their quality of life (Hamid, F., & Hendrawan, K.T.). Therefore, it has become commonplace that exercise has become a basic right of every person. It is unrealistic to measure sports success only based on medals, considering that sports activities do not only end with high achievements measured by medals. Because sport is a vehicle for improving the quality of human life, both in terms of physical, mental, emotional and social activities (Siegrist, M., et al., 2013).

Environment and preserving it, developing understanding and ability and understanding of the importance of maintaining environmental balance and using it wisely. Raising human awareness of the importance of fostering reciprocal relationships between humans and their environment and to increasingly recognize their nature or character. Helping with positive behavior and developing social relationships to individuals. Helping

science about healthy environmental practices. Opening up opportunities to build cooperation between communities with sports organization services in particular and the community in general. Growing and or strengthening self-confidence and self-esteem which are a strong foundation for growing self-concept (Sawada, S.S, 2014).

Strengthening brotherhood and the growth of mutual support among group members. Adding or improving skills and coordination. Adding personal pleasure and a sense of togetherness among group members. Educating someone to be able to fill their free time with positive activities in the sense of not harming themselves, others, or the environment or nature and on the contrary preventing the emergence of negative activities, such as drug use and other similar negative activities. Reminding the culture of healthy living, both for individuals and for others and or the natural environment (Oliveira, A., 2017). Many values can be obtained from sports using a scientific basis. Tension can be released and the existing energy can be used in useful ways.

Sports Health is a collection of sciences that discuss all health problems related to sports. In addition to the goal of achieving the highest achievement in Achievement Sports, sports itself is also a tool to improve health, which means improving the quality of human resources (Giriwijoyo, S., et al., 2020). Thus, the basic concept of Sports Health is reciprocal training of human resources towards complete health according to the World Health Organization's (WHO) health formula, through Physical Education, Sports and Health, implementation of Health Sports and Achievement Sports, and Sports Health services (Shuler, FD, et al., 2020).

With such a scope, the problem of Sports Health is very broad and can even cover all aspects of human life. Human life around Physical, Spiritual and Social problems, as expressed in the World Health Organization's Healthy formulation, which has also been accepted by the Indonesian Ministry of Health, which states that Health is Physical, Spiritual and Social Well-being, not only free from Disease, Disability or Weakness (Moseid, CH, et al., 2018).

Physical fitness is a very important indicator of health for a person. Physical fitness is related to a person's physical ability and capability to carry out their daily tasks efficiently and effectively for a relatively long time without causing significant fatigue, in addition to still having reserve energy to carry out other activities (Agus, A, 2012).

Fitness level is defined as a measure of a person's ability to perform daily activities. The higher a person's fitness level, the better the ability to perform activities, especially in terms of physical strength or stamina. A person with good physical fitness will support his success in various activities in life (Jusran, et al, 2023).

According to Wiarto (2013) in Hasanuddin (2020), the benefits of physical fitness training are to improve and maintain a person's level of physical fitness. Therefore, it is important for every individual to maintain physical fitness by doing physical activities regularly and according to their respective abilities. Physical fitness is an important aspect that humans need to carry out daily activities. Physical fitness can be obtained by getting used to a healthy lifestyle, such as doing regular physical activities.

Physical activity greatly affects a person's level of physical fitness. One of the good physical activities to improve physical fitness is exercise. The ideal sport is a sport that increases heart and lung endurance, while also training muscle endurance and strength. The size of the sport can be assessed based on the type of sport performed, frequency, intensity, and duration of exercise (Rohmah, L., & Muhammad, H. N, 2021). Nutritional status is one of the factors that must be considered considering that lack of nutritional status can result in low physical quality which can have an impact on decreasing the level of physical fitness.

MATERIALS AND METHODS

The study in this study is qualitative with literature. The literature study research method is a research approach that involves the analysis and synthesis of information from various literature sources that are relevant to a particular research topic. Documents taken from literature research are journals, books and references related to the discussion to be studied (Earley, 2014; Snyder, 2019).

RESULTS AND DISCUSSION

Scope of Sports Health

Sports health is a collection of sciences that discuss all health problems related to sports (Giriwijoyo, S., et al, 2020). This means that the scope of sports health/sports medicine is very close to medical science which aims to maintain the health of athletes.

a. Physical aspect

In the physical aspect, the scope of sports health plays a very clear role, because this aspect is the beginning of all forms of coaching. From the physical aspect, a coach or teacher can analyze and know from the start of an athlete's growth and development, analyze the anatomy of the body so that the coach or teacher can guess the development of the athlete in its branches. The scope of sports health will also not be separated from prevention efforts such as preventing sports injuries, which can be analyzed and efforts to heal injuries through massage methods.

It can be said that almost all Health Sciences that discuss the physical aspects of humans are interrelated with each other, but this is even beneficial, because it will get a discussion of a Sports Health problem from various perspectives of Sports Health Science. Sports Health Sciences that discuss the Physical aspect include discussions on:

1. Health Sciences, which include issues:
   Static Health, which gave birth to Health Sciences and Health Education in relation to Sports and Dynamic Health, which gave birth to Sports Health Sciences and Health Sports with the scope of discussion on preventive-promotive Sports, Sports in Schools, Sports in Children, Sports in Women, Sports in the Elderly, Sports for the Disabled and Achievement Sports with all their problems related to Health.
2. Growth and development, this problem is widely discussed in Sports in Children.
3. Histology: discusses the problem of Cellular-molecular Anatomy-Physiology in relation to Sports.
4. Anatomy: the basic discussion is introducing the structure and basic components of the human body. The relationship between Anatomy and Sports is in terms of the Anthropometry of the Sports branch, which discusses the problem of anatomical profiles and anthropometric measurements of which Athletes are suitable for each branch of Sport. In terms of breeding sports branches, this problem must receive careful attention, besides of course the genetic problem which can be comprehensively traced from the anatomical and anthropometric structures as well as the history of sports in the family concerned.
5. Physiology (Physiology), which includes:
   a) Basic Physiology: discusses the function and working mechanism of various body organs. The discussion is arranged based on the system according to the systematics in Anatomy. At the end of each discussion, a brief review of its role in Sports is given.
   b) Sports Physiology/Occupational Physiology: discusses the physiological responses and adaptations of various body organs to work and sports, which are acute

physiological influences (physiological responses) and chronic ones (physiological adaptations). Sports Physiology discusses physiological changes due to the influence of maximal or near-maximal physical activity. The main topic of discussion is Training Physiology for achieving maximum performance in Achievement Sports (Shuler, F. D., et al, 2012).

While Occupational Physiology discusses physiological changes due to the influence of chronic optimal physical activity.

6. Biomechanics: discusses the problem of biological motion mechanics (Kinesiology) of athletes to achieve maximum performance in their sport. Understanding this problem is very necessary to minimize the possibility of sports injuries during training.
7. Sports Injuries discuss problems related to:
   a) Mechanism of injury
   b) Prevention of sports injuries
   c) Diagnosis and first aid for sports injuries; how further treatment can be done at the scene or must be referred to the hospital. This is very important to understand because misdiagnosis and especially mistakes in first aid can worsen the injury itself.
   d) Recovery (rehabilitation) from injury so that it can return to its original sports activities as quickly as possible. For this, knowledge of Physiotherapy and Rehabilitation is needed (Waddington, I., & Smith, A, 2013).
8. Massage as an effort to accelerate recovery, how is the methodology and technology of massage effective and efficient, for example, warm and cold-water hydro-massage.
9. Nutrition and Nutrition: Is there a difference between Athletes and non-Athletes in their nutrition and nutrition, how to organize nutrition during training, before competition and during competition. What is the role of macronutrients and micronutrients in relation to sports and health maintenance.
10. Pharmacology: It is necessary to understand the concept of doping, ethics, dangers and how to use drugs to be free from the misuse of drugs unconsciously, which can be very detrimental to athletes (Alexander, B., et al, 2022).

b. Spiritual and social aspects

This aspect is closely related to self-confidence factors. This is also related to sports psychology, sports pedagogy, and sports sociology.

c. Environmental aspects

This aspect greatly influences the development of athletes. The scope of sports health is closely related to environmental aspects. This aspect can appear in athletes when they are stimulated by their environment (Wisahati, A. S., & Santosa, T, 2010).

Physical Changes Due to Exercise

a. Increased Heart Strength

This is characterized by an increase in the size and strength of the left ventricle of the heart, which plays a role in pumping blood throughout the body. In normal adults who do not routinely engage in physical activity, the heart pumps about 60 ml of blood. However, people who routinely engage in physical activity can pump up to 100 ml of blood at rest. This increase in capacity also causes a lower heart rate because the heart can work more efficiently in pumping blood (Kalangi, S. J, 2014). Heart capacity is also important for maintaining blood vessel elasticity, muscle growth, and oxygen intake capacity.

b. Muscle Enlargement

As the body's driving organ, muscles require a lot of energy obtained from oxygen and food stores. The increase in muscle size and mass is caused by muscles that have adapted and have more capillary blood vessels, mitochondria, energy-producing enzymes, and the capacity to store more food such as carbohydrates, glycogen, and fat. Muscle capillary blood vessels are useful for helping the efficiency of muscle work in producing energy through the transport of oxygen and food. Oxygen is needed by mitochondria in muscle cells to produce energy, this process is also assisted by myoglobin which tends to increase in actively used muscles. By exercising regularly, muscles will also be more adapted to use food effectively.

c. Increased Lung Capacity

The higher the intensity of a person's exercise, the greater the body's oxygen needs. To meet these needs, the human lungs can adapt by storing more oxygen. However, the size of the lungs does not increase. Increasing lung capacity allows the lungs to store, use, and distribute oxygen more efficiently, so that the lungs can work well without taking too many breaths. This will prevent running out of breath when running or doing high-intensity exercise. In general, lung capacity is much lower if a person is not physically active.

Although lungs that have adapted are able to inhale more oxygen in one breath, individuals who exercise regularly tend to have low oxygen intake levels when at rest. This is because the body has been trained to meet and distribute oxygen efficiently.

d. Bones Regenerate Faster

Bone adaptation to exercise can be triggered by muscle contractions against the bones. This helps the bone regeneration process by new bone cells after degeneration occurs. This process occurs slowly and gradually, and can be triggered by all types of sports, especially endurance training that can train muscle strength.

Regeneration begins in the outer layer of the bone to the inside. Bone regeneration generally occurs in the axial bone group (such as the spine, ribs, skull, and sternum) and limb bones (long bones in the upper arm and thigh, shoulder bones, waist bones, and pelvis) (Mintarto, E., & Fattahilah, M, 2019).

Physical Education, Sports and Health and Physical Fitness

One of the goals of Physical Education, Sports and Health is to improve the physical fitness of students. With good physical fitness, it is expected that they can follow or carry out other learning activities better (Dewi, N.K.A.T.C., et al, 2020). We can understand this because physical fitness greatly influences a person's ability to do work for a long time without experiencing significant fatigue and being able to do other work with a quality that is not much different from previous activities.

Physical Education through physical activities can directly improve the quality of students' physical fitness. Physical fitness is classified into two:

a. Health-related physical fitness consists of heart and lung endurance, muscle strength, flexibility and body composition.
b. Physical fitness related to skills (skill relation fitness) consists of balance, power, coordination and agility. (Beieits, M. W., & Piiteittii, K. H, 2005).

Physical fitness related to children's health is very much needed to spur their growth and development. With good physical fitness, children can do various physical activities needed for growth and development and are resistant to disease attacks. Physical fitness is not a direct basis for the development of thinking, but it can provide a supply of materials needed by the brain. With good brain growth, the possibility of brilliant thinking skills will also be created (Siedentop, D., & Van der Mars, H, 2022).

The components of physical fitness related to health (health related fitness) are as follows: (Sukamti, E. R., et al, 2016).

a. Cardiovascular endurance

Cardiovascular endurance is the ability of the heart, lungs and blood vessels to function optimally when carrying out daily activities for a long time without experiencing significant fatigue. Cardiovascular endurance is vital in supporting muscle function, namely by taking oxygen and distributing it to active muscles. Cardiovascular endurance is very much needed by children to carry out learning activities and do other activities such as playing, helping parents.

b. Muscle strength

Muscle ability is defined as the ability to contract maximally against resistance. Muscle strength is defined as the ability of a muscle or group of muscles in a single maximal contraction. For students, muscle strength is needed to lift, pull, push, and so on.

c. Flexibility

Flexibility is the ability of joints to move as much as possible. Flexibility can indicate the extent of joint movement according to possible movement. In addition to being useful for children's daily activities, flexibility is also useful for preventing injury.

d. Body composition

Body composition can be defined as the composition of the body, namely body fat and lean body mass. For children, in addition to indicating growth and development, it is also described as health and nutritional status. Each child will show different growth and development. Body composition is used as a parameter for children's growth and development.

CONCLUSION

Sports in general should be understood as a training tool to maintain, improve the degree of dynamic health and quality of life towards a complete prosperous condition according to the WHO Health concept, in addition, Health sports in human resource quality development institutions and in the wider community in general must be felt as a need. Sports health is a collection of sciences that discuss all health problems related to sports. This means that the scope of sports health/sports medicine is very close to medical science which aims to maintain the health of athletes. In addition to the formation of the body, achievement, social, mental, speed of thought processes, and personality as stated, the role of physical education also has a very large influence on the development and improvement of physical fitness and skills. Forming attitudes and sportsmanship, as well as behavior that is in accordance with the personality of the nation. Developing habits to move and habits for a healthy life. Helping in adjusting, interpreting, and developing the physical, mental, emotional, and social of each individual optimally, through lessons and participation in guided and directed exercises, and which are selected according to social and health norms.

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