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Application of the Tonnis Game Branch of Sports in Improving Physical Fitness

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Abstract

This research investigates the impact and correlation of tennis games on the physical fitness of students at State Elementary School 11 Tanjung Batu. The study employs a quantitative descriptive approach to analyze data collected in percentage form, which is then discussed descriptively using a solid theoretical framework. The research involved 40 students from Tanjung Batu State Elementary School during the academic year 2023-2024. The findings reveal a robust relationship between the application of tennis games and improvements in physical fitness among students. The correlation coefficient (r) of 0.774 indicates a strong relationship, highlighting the effectiveness of tennis games in enhancing physical fitness levels. This is particularly evident in fostering creativity and skill development in small ball sports within the physical education curriculum. The implications drawn from this research underscore the practical benefits of incorporating tennis games into educational settings to bolster students' physical fitness. The successful implementation of tennis games as a means to enhance physical fitness outcomes underscores its viability and relevance in educational practices. This research contributes valuable insights into the positive outcomes of integrating sports like tennis into physical education programs, emphasizing its role in promoting overall health and skill development among school children. In conclusion, the study substantiates the significance of tennis games not only as a recreational activity but also as a structured approach to improving physical fitness and fostering motor skill development among elementary school students. The findings encourage further exploration and adoption of tennis and similar activities within educational curricula to optimize physical education outcomes.

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INTRODUCTION

The Tonnis is a relatively new racket sport introduced in Indonesia in 2005 by a team from the Faculty of Sports Science at Universitas Negeri Semarang (Unnes). This sport emerged due to challenges in teaching traditional tennis to students on campus. It utilizes a paddle-like racket called a paddle to hit a tennis ball designed for younger players, which is lighter and more flexible to ensure safe play. The court dimensions are 13.40 meters long, 2.10 meters wide, with a net height of 80 cm (Supriyatno, 2020). Tonnis combines elements from both badminton and traditional tennis, borrowing techniques primarily from the latter. Key fundamental techniques in tonnis include grip, ready stance, and striking technique, which bear similarities to those in tennis, making it easier for tennis players to transition into tonnis.

Despite its potential, tonnis remains relatively unknown and undeveloped among the general public. Unlike badminton, which is highly popular and successful in Indonesia, tonnis has yet to gain widespread recognition. Recent efforts have seen the establishment of governing bodies in various regions, but accessibility to tonnis remains limited (Muktiani et al., 2022). Unlike badminton, which boasts numerous international achievements and a robust following, tennis in Indonesia faces significant challenges, primarily due to a severe lack of facilities. This shortage impedes grassroots development programs aimed at nurturing talented players, thus limiting the growth and success of Indonesian tennis (Alcal & Garijo, 2017).

Tonnis aims to diversify the selection of sports available to all segments of society and potentially become a national sporting focus for achieving international success. Through public awareness campaigns and proper training programs, tonnis hopes to garner interest and participation among schools and the wider community. This strategic approach aims to optimize player performance and foster a sustainable culture of tonnis in Indonesia. Tonnis, a relatively new small-ball sport, has not yet gained widespread popularity compared to other games in Indonesia, especially in South Sumatra. This lack of popularity can be attributed to limited public awareness and understanding of the game's rules and techniques, as well as the absence of scheduled competitions and adequate facilities. However, efforts to introduce and promote basic tonnis techniques through socialization processes aim to educate and encourage communities to learn and practice the sport. This initiative targets students, particularly at State Elementary School 11 Tanjung Batu in South Sumatra, with the goal of nurturing talented and professional tonnis athletes.

Tonnis was developed by Hapsari et al., 2022 and was subsequently presented to educational and military institutions across Indonesia on November 20, 2009. Combining elements from badminton and tennis, tonnis requires a court similar in size to a badminton court, with surfaces that can include clay, grass, or concrete (Elfiadi, 2016). In schools, traditional games can be introduced through physical education, which systematically plans activities to stimulate physical, organic, motor skills, cognitive, emotional, social, and moral development (Hendrawan et al., 2018).

Physical education and health education are essential in developing tonnis as a new sport, especially outside Sumatra. Physical activity among students has been insufficient, leading to decreased physical fitness. Tonnis can be integrated into physical education to measure students' physical fitness levels and apply tonnis games to increase physical fitness and health education. Based on the research and discussions from various scholars, physical fitness is crucial in relation to sports and physical activities. According to (Hidayat et al., 2017), physical fitness in the context of sports and physical activities refers to the ability of an individual to carry out daily life without exceeding the body's stress endurance limits, maintaining a healthy body, and reducing the risk of diseases caused by low fitness levels or lack of physical activity. Students who are physically fit tend to concentrate better and exhibit higher motivation, positively impacting their academic performance.

Physical fitness is essential for individuals to efficiently perform daily tasks without significant fatigue, allowing them to enjoy leisure time as well. Achieving good physical fitness requires appropriate, systematic physical exercises that do not overburden the body (Handayani et al., 2019). The body's form is influenced by various factors, including an individual's physical fitness level. Physical fitness reflects one's functional capacity to handle physical tasks, dependent on the biodynamic potential consisting of functional and metabolic potentials. Physical activities play a significant role in enhancing physical fitness, and there are differences in physical fitness improvement between genders, as highlighted in research on elementary school students (Hartati et al., 2020) in (Arisandi, et all., 2021).

Children in elementary school are at a stage of rapid physical and cognitive growth, and their development can be supported through understanding their physical growth (Sumarjono et al., 2024). Physical education involves teaching

and training individuals to mature through educational efforts, focusing on physical and bodily aspects (Paling et al., 2024). Tonnis, a relatively new sport combining elements from badminton and tennis, offers opportunities for physical activity that can enhance students' physical fitness. Previous research by (Supriyatno, 2020) emphasized the potential of tonnis in increasing physical activity among middle school students, suggesting further exploration and development of the sport at different educational levels, including elementary schools.

Given the limited popularity of tonnis among students, particularly in South Sumatra, this research aims to introduce and implement recreational tonnis as a means to improve students' physical fitness at State Elementary School 11 Tanjung Batu. This initiative seeks to measure and promote awareness of tonnis as a recreational sport, contributing to the physical development of students through structured physical education. Therefore, this study titled "Implementation of recreational tonnis to enhance physical fitness among students at State Elementary School 11 Tanjung Batu" is undertaken to guide educators in developing students' physical fitness through recreational tonnis gameplay aligned with their current physical fitness levels.

METHODS

This research employs a quantitative approach, in line with (M. Piton, 2022), who define quantitative research as being based on positivism, involving the determination of population and sample sizes. Additionally, it adapts a descriptive quantitative technique, as described by Sugiyono, (2016), used to process data in percentages and describe it descriptively based on established theories.

The goal of data analysis in this study is to depict the characteristics of each data variable collected using validated and reliable research instruments. The data is analyzed using statistical principles to generate numerical or quantitative results aimed at answering formulated hypotheses. Quantitative data in this study is obtained through testing processes, including the National Student Fitness Test (TKPN) and the Tennis Game Test. These tests encompass measurements of psychomotor performance, such as serving techniques and smashes in tennis. The test results are then comparatively analyzed descriptively, considering predefined criteria for movement quality. By utilizing this quantitative approach, the study aims to provide a deeper understanding of the impact of implementing tennis games on improving physical fitness among students at State Elementary School 11 Tanjung Batu, South Sumatra. The outcomes of the data analysis are expected to significantly contribute to the development of recreational tennis sports as part of physical education in schools.

This research involves a population of 40 students from State Elementary School Tanjung Batu. The subjects of this study are 40 students from State Elementary School Tanjung Batu for the academic year 2023-2024. The sampling method used is purposive sampling, a technique for selecting subjects based on specific criteria (Sugiyono, 2016). According to Arikunto, 2015, research instruments are tools used by researchers to facilitate data collection, making their work easier and more effective

The research instrument selected for testing will be the National Student Fitness Test (Tes Kebugaran Pelajar Nusantara - TKPN). This choice is based on its common usage and validity across Indonesia. Moreover, TKPN is relatively easy to administer with validated and reliable instruments, making it suitable for data collection in this study. The National Student Fitness Test issued by the Ministry of Education and Culture is widely accepted as a valid instrument throughout Indonesia (Rusdiana et al, 2022), specifically designed for students aged 9-18 years to assess physical fitness.

The data utilized in this study employs quantitative descriptive statistics with percentages (Fraenkel & Goldstein, 2024). Data calculations are conducted to generate achievement percentages, which are then interpreted as numerical figures. The collected data is converted into a value table based on TKPN (Rusdiana et al, 2022). To evaluate performance and each segment of the test, analysis is carried out using descriptive percentage norm tables. This is done to establish classifications of physical fitness levels.

FITNESS CALCULATION FORMULA

The Indonesian Student Fitness Test is calculated using a formula based on the proportions that have been determined as follows **Tabel 1**.

Tabel 1. Proportion of Indonesian Student Fitness Tests

Variabel	Weight	Value	Value Proposition
Pacer test	50	5	2,5
Squat Thrust	20	5	1
Sit Up	20	5	1
V-sit and reach	10	5	0,5
Total			5

Source: (Rusdiana et al, 2022)

The categories of physical fitness test results are as follows **Tabel 2**.

Tabel 2. Categories of Physical Fitness Test Achievement Results

Achievement Results	Category
> 4	Excellent
3 – 3,9	Good
2 – 2,9	Enough
1 – 1,9	Less
< 1	Very Less

Source: (Rusdiana et al, 2022).

RESULTS AND DISCUSSION

Based on the research findings, to accept Ha or reject Ho with the assistance of significant correlation, if the significance value is greater than 0.05, Ha is accepted and Ho is rejected. From the output table, the significance value (sig) is 0.000, which is less than 0.05, indicating that Ha is accepted and Ho is rejected. Therefore, there is a significant relationship or correlation between anthropometric profiles and physical fitness, as indicated by the correlation coefficient (r) of 0.774. This shows a strong relationship between the data from tennis games and students' physical fitness.

Tabel 3. Coefficient Interpretation Guidelines

Achievement Results	Category
> 4	Excellent
3 – 3,9	Good
2 – 2,9	Enough
1 – 1,9	Less
< 1	Very Less

Source: (Sugiyono, 2022)

Based on **Tabel 3** above, the r value according to Sugiyono (2022) in this study the r value = 0.774 is included in the strong criteria. So the correlation between tennis and physical fitness is strong. A summary of the results of linear analysis in this research is presented in the following **Tabel 4**.

Tabel 4. Linear Regression Analysis Results

R Count	R table	Sig.	R2
0,774	0,273	0,000	0,599

Hypothesis testing criteria are accepted Ha if Rcount is greater than Rtable and reject Ho if Rcount is smaller than Rtable. Based on the table above, it can be seen that there is a positive and significant relationship between tennis games and physical fitness with an Rcount of 0.774 which is greater than the Rtable (0.774>0.273) and a significant value of 0.000 is less than 0.05 (0.000<0.05), with the results obtained, the Ha hypothesis is accepted and Ho, Ha is rejected with the statement "There is a correlation between playing tennis and the physical fitness of students at State Elementary School 11 Tanjung Batu".

The implementation of the sport of tennis in enhancing physical fitness in State Elementary School 11 Tanjung Batu is quite promising, especially considering its novelty among elementary school children, particularly in the Tanjung Batu district. Based on the research findings, the sport has shown significant potential and is deemed suitable for further development to ensure all students understand and enjoy playing tennis effectively and correctly in both the sporting and educational realms. According to Mahendra et al., (2024), the execution of tennis in education holds strategic significance for various stakeholders, including participants, physical education teachers, and others, due to its role in physical health enhancement, neuromuscular development, emotional and social growth, and intellectual development.

The ultimate goal of physical education and sports lies in its unique role in character refinement and the formation of strong personalities. In tennis, proficiency extends beyond technical skills to encompass cognitive abilities, requiring players to comprehend game-related concepts and rules (Yuan et al., 2024). Besides cognitive aspects, attitude is equally crucial in tennis; mastery of attitude allows players to approach match outcomes wisely. The cognitive domain pertains to mental activities, encompassing all efforts involving the brain. Cognitive goals focus on thinking skills ranging from simple intellectual abilities like remembering to complex problem-solving skills requiring students to connect and integrate various ideas, methods, or procedures (Kamaruddin, 2020).

Participants in the tennis program quickly acquired technical skills, likely due to their excellent motor skills and prior proficiency in related sports such as badminton and table tennis. Feedback from participants suggests a desire for more frequent similar activities, as many educators in the area remain unfamiliar with tennis. Tennis is relatively easy to play and encourages creativity among teachers who may need to modify equipment due to resource constraints.

Note that mastering techniques like the serve and smash requires precision and skill. Learners benefit from effective learning processes to absorb and apply these techniques easily. The smash, in particular, poses challenges for students, highlighting the need for dedicated coaching and motivation to achieve proficiency. Mastering basic techniques and understanding tennis rules, combined with a willingness to learn, enhances student motivation in tennis.

According to (Supriyanto, 2016), the willingness to move and the selection of appropriate learning methods in tennis can elicit positive responses from students in improving their tennis-playing skills. Tennis has technical benefits; with similar basic movement concepts and techniques as tennis, tennis can assist students in developing motor skills that support tennis activities. Despite tennis not being widely taught in schools, there is potential for students to be interested in the sport. Physical fitness is crucial for playing tennis effectively.

Based on previous research regarding the relationship between tennis and students' physical fitness at SMP Negeri 2 Tangeran, which involved conducting physical fitness tests and tennis gameplay tests, a correlation was found. Therefore, based on my research on tennis gameplay and students' physical fitness at State Elementary School 11 Tanjung Batu, using data from tennis gameplay measurements and physical fitness tests using TKPN, hypothesis testing was conducted and correlated using the product moment with SPSS assistance. The results showed a significance of 0.0000, indicating a correlation between tennis gameplay and students' physical fitness, with a correlation coefficient value of r=0.774, classified as very strong.

The implementation of physical fitness holds significance as it reflects one's ability to perform daily activities without excessive fatigue and still have energy reserves for other tasks (Arisandi, et all., 2021). Physical fitness displays the functional capacity of an individual to undergo physical fitness tasks depending on their biodynamic abilities, comprising functional and metabolic capabilities. Physical activities contribute to increasing physical fitness.

The learning process for physical education subjects in schools is conducted only twice a week, which may not adequately meet students' needs to enhance their physical fitness. Insufficient physical activity results in spending more time sitting at home rather than playing and interacting with peers outside. Moreover, the advancing era has led elementary school children to possess and proficiently use mobile phones, resulting in sedentary behavior and reduced physical activity. To achieve good physical fitness, it is necessary to engage in physical activities three times a week consistently.

According to (Hartati et al., 2020), individuals can perform daily activities optimally and maximally if they have a healthy and fit physique. Thus, the physical fitness one possesses positively influences productivity in work and study. Physical health development correlates with improving body fitness, which positively impacts mental well-being. Therefore, to achieve holistic harmony as individuals, everyone must have both physical and mental health, enabling them to live balanced lives and achieve desired life goals.

Having a healthy and fit body is crucial for daily activities as living beings. This is because having a fit body enables individuals to achieve optimal results in various tasks (Burhaein & Solekhah, 2024). Physical fitness is defined as a prerequisite during daily activities; good physical fitness means having sufficient energy to engage in other activities (Hartati et al., 2020). According to (Ginanjar & Anggraeni, 2024), physical fitness leads students towards readiness, encompassing physical, mental, and emotional aspects, as well as psychological and physical maturity. This encourages learning and practicing, ultimately aiding in achieving desired academic achievements.

In tennis, physical fitness is essential as it provides the energy needed to perform game activities effectively, influenced by tennis training patterns and maintaining a player's fitness through adequate nutrition. Balanced body weight and proportions are necessary for optimal daily performance. Thus, achieving students' fitness requires balanced nutrition, which enhances their physical fitness (Purnamasari & Umiyati, 2024). The school-age phase requires nutritious food intake to support growth, development, and meet energy needs (Setianingsih et al., 2024).

Tennis, aside from being earmarked as a sport of achievement in the future, can serve as a learning medium in schools, from elementary to high school levels. This underscores a significant concern for Physical Education teachers in Indonesia in general and Tanjung Batu in particular. Many PE teachers are unfamiliar or lack in-depth mastery of tennis (Nur et al., 2024). The objective of physical education is not solely to develop students physically but also to foster critical thinking, emotional stability, adaptation skills, and integration with the environment in accordance with prevailing norms (Masitoh & Putra, 2024).

Furthermore, modifying movements in

sports games can include basic techniques in any sports branch. Game modifications can enhance student motivation in the learning process (Mashud et al., 2024). To facilitate students in mastering sports skills, modifications to sports branches are necessary to match the child's movement task, the form of active movement, and the movement strategy anticipation response to external environmental response and difficulty level. Tonis is a modification of tennis sports. Tennis, a sports branch that is not widely taught by teachers in schools, prompted the development of the concept and modification of tennis sports, known as tonis.

The game of tonnis and physical fitness are two closely related components; an individual's tonnis game activity can be influenced by their physical fitness. Physical fitness levels can also indicate a person's ability to perform an activity without feeling significant fatigue, even when continuously engaging in physical activities. Therefore, there is a relationship between tonnis gameplay and student physical fitness. Teachers are one of the determining factors in the success of student learning activities in schools. Not all teachers understand the intricacies of teaching and learning activities well. This can be attributed to the development and progress in the learning world that teachers are not yet aware of (Supriyanto, 2016).

Suggestions from this study include implementing training followed by championship programs to boost enthusiasm among teachers and students for tonnis practice. Additionally, schools can provide tonnis extracurricular activity facilities to enhance students' skills in playing tonnis.

CONCLUSION

Based on the results of the research discussion Based on the research findings, there is a strong correlation between the application of tennis games and the improvement of physical fitness. This suggests that tennis games can be effectively implemented to enhance students' game creativity in physical education, particularly in small ball games. The research action of applying tennis games to improve physical fitness has proven successful, demonstrating that mastering basic tennis techniques and encouraging movement are effective learning methods. Tennis elicits positive responses and significantly aids students in improving their small ball playing skills and overall physical fitness.

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