



## An Evaluative Study of the Physical Condition and Anxiety Level of Squash Athletes in South Sulawesi Post-BK PON XXI Aceh-Sumut.

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### Abstract

This study aims to evaluate the physical condition and anxiety levels of South Sulawesi squash athletes after participating in the Qualifying Round of the National Sports Week (BK PON XXI Aceh–North Sumatra). The study used a mixed methods approach involving all eight South Sulawesi squash athletes. Quantitative data were obtained through physical condition tests including VO<sub>2</sub>max (Cooper test), squat jump, push-up, sit and reach, and wall ball test, as well as measuring anxiety levels using the Competitive State Anxiety Inventory-2 (CSAI-2) instrument. Qualitative data were collected through in-depth interviews with athletes and coaches. The results showed that aerobic endurance and muscle strength were in the good category, while flexibility and leg power were in the adequate category. Anxiety levels showed high cognitive anxiety, moderate–high somatic anxiety, and relatively low levels of self-confidence. Statistical analysis showed a significant positive relationship between VO<sub>2</sub>max and performance ( $r = 0.62$ ;  $p < 0.05$ ) and a significant negative relationship between cognitive anxiety and performance ( $r = -0.58$ ;  $p < 0.05$ ). Regression results showed that physical condition and anxiety levels contributed 48% to athlete performance. The study's conclusions confirm that squash athlete performance is influenced by both physical and psychological factors, necessitating a systematic integration of physical and mental training.

**Keywords:** Squash, Physical Condition, Anxiety, Athlete Performance

### Introduction

Squash is an individual sport played indoors using a small rubber ball and special rackets. (2023) stated that Squash has a unique characteristic in the ball used. The ball used in Squash is different from tennis and is made of rubber. This game requires athletes to move quickly, make high-precision shots, and develop strategies in a short time. Squash has several shot techniques such as the boast shot, underhand shot, serve, drive, drop shot, volley, kill shot, and lob shot (Iswoyo & Junaidi, 2015). As an individual sport, squash presents a unique challenge for athletes because they must be fully responsible for their performance on the court without direct support from teammates like in team sports. The popularity of squash continues to increase worldwide, including in Indonesia. Although not as popular as other sports such as soccer or badminton, squash has great potential to develop, especially among the younger generation who enjoy intensive and competitive physical activity. In Indonesia, this sport has become part of national events such as the National Sports Week (PON), which provides opportunities for regional athletes to compete at the national level. However, despite its significant potential, the development of squash in Indonesia still faces several obstacles,

such as a lack of facilities, a shortage of professional coaches, and low public awareness of the sport's importance. Therefore, evaluating factors that influence squash athlete performance, such as physical condition and anxiety levels, is crucial to supporting the sport's future development.

The National Sports Week Qualification Round (BK PON) is the main selection stage for regional athletes to qualify for the national level. This event is not just a competition, but also a test for athletes to prove their abilities under high pressure. For South Sulawesi squash athletes, the Aceh-North Sumatra BK PON is a crucial opportunity to demonstrate their best performance and fight for a place in the PON. However, match results in the BK PON are often influenced by various factors, both internal and external. One of the most significant internal factors is the athlete's physical condition. In squash, athletes are required to have good aerobic and anaerobic endurance, high reaction speed, and optimal body flexibility. If an athlete's physical condition is inadequate, their performance on the court will be impaired, even if they have good technical skills. In competitive sports, physical aspects are very important and affect athletes during competitions (Minarni et al., 2019) . In addition to physical condition, psychological factors such as anxiety levels also play a significant role in determining match outcomes. Anxiety can arise from pressure to perform optimally, expectations from oneself or others, and uncertainty about the outcome of the match. High levels of anxiety can lead to impaired focus, stress, and decreased performance, while low levels of anxiety can actually increase motivation and concentration. Evaluating athletes' physical condition and anxiety levels after the PON BK is a strategic step in identifying their strengths and weaknesses. The results of this evaluation can be used as a basis for designing more effective training programs, both physically and mentally, so that athletes can perform better in subsequent competitions.

Physical fitness is the body's ability to perform physical activity efficiently and effectively. In the context of squash, physical fitness encompasses several key components: endurance, strength, speed, flexibility, and coordination. Endurance is the body's ability to sustain physical activity for extended periods. In squash, athletes often play for 45–60 minutes at high intensity, which requires good aerobic and anaerobic endurance. Wiguna (2023) stated that aerobic endurance is important for maintaining stamina during a match, while anaerobic endurance is needed to generate power in short sprint situations. Strength is the ability of muscles to produce maximum force. In squash, leg and core muscle strength is essential for performing fast movements, jumping, and maintaining stability during play. Speed is the ability to move quickly in a short time. In squash, reaction and movement speed

are essential for chasing the ball and executing return shots. Flexibility is the ability of joints to move through a full range of motion. Good flexibility allows athletes to perform fluid movements and avoid injury. Coordination is the ability to integrate body movements harmoniously. In squash, coordination between the eyes, hands, and feet is essential for producing accurate shots. Subarjah (2013) stated that good physical condition not only improves athlete performance but also reduces the risk of injury. Therefore, evaluating the physical condition of squash athletes after the PON BK is very important to ensure that they have a strong foundation for competing in the next competition.

Anxiety is an emotional response to a situation perceived as threatening or stressful. In the context of sports, anxiety can be divided into two types: state anxiety and trait anxiety. State anxiety is temporary anxiety that arises in certain situations, such as during a match. The level of state anxiety can vary depending on the level of pressure an athlete feels. Trait anxiety is a permanent anxiety that is part of an individual's personality. Athletes with high trait anxiety tend to be more prone to anxiety in competitive situations. Anxiety levels can affect athlete performance through the "inverted-U hypothesis." This theory explains that moderate levels of anxiety can enhance motivation and performance, while too low or too high levels of anxiety can actually impair performance. Research by Weinberg & Gould (2023) showed that athletes who are able to manage their anxiety well tend to have more stable and consistent performance. Anxiety can arise at any time, one of the causes of anxiety is excessive and prolonged tension (Kusumawati & Mylsidayu, 2015). Therefore, evaluating the anxiety levels of squash athletes after the BK PON can provide insight into how they deal with the pressure of competition and what needs to be improved psychologically.

South Sulawesi squash athletes hoped to achieve maximum results at the Aceh-North Sumatra National Sports Week (PON) and even qualify for the PON. However, in reality, many athletes failed to achieve this target. Initial evaluations revealed several factors contributing to the gap between expectations and reality. First, athletes' physical condition was suboptimal. Several athletes experienced fatigue or injury during matches, indicating that their physical training programs were not adequate to withstand the high intensity of competition. Second, unmanaged anxiety levels. Many athletes experienced high levels of anxiety during matches, which disrupted their focus and concentration. This suggests that psychological aspects were not prioritized in their training programs. Third, a lack of mental and strategic preparation. Several athletes admitted that they lacked mental and strategic preparation to face more experienced opponents. This gap highlights the need for a

comprehensive evaluation of the physical condition and anxiety levels of South Sulawesi squash athletes after the PON BK to identify areas for improvement .

### Materials and Methods

This study used quantitative and qualitative approaches to analyze the physical condition and anxiety levels of South Sulawesi squash athletes after the BK PON Aceh-Sumut. The quantitative approach was used to measure variables such as physical condition (endurance, strength, speed, flexibility, and coordination) and anxiety levels using a standard scale. The qualitative approach was carried out through in-depth interviews with coaches and athletes to obtain subjective perspectives on the factors that influence their performance. The study was conducted in South Sulawesi, focusing on squash athletes who participated in the BK PON Aceh-Sumut for 3 months consisting of data collection, data analysis, and report preparation. The sample was all South Sulawesi squash athletes who participated in the BK PON Aceh-Sumut. Data Collection Techniques

To achieve the research objectives, data were collected through the following methods: 1. Physical Test, 2. Anxiety Level, 3. Interview, 4. Documentation.

### Results

#### 1. Physical Condition Test Results

Physical condition test results were obtained from eight South Sulawesi squash athletes following the BK PON XXI Aceh–North Sumatra. The physical test instruments included: VO2 max (Cooper test), squat jump, 1-minute push-up, sit-and-reach, and wall ball test.

Physical Components	Average	Category
Vo2 Max (Ml/Kg/Min)	47.2	Good
Squat Jump (Cm)	46.5	Enough
Push-Ups (Number/1 Minute)	42.3	Good
Sit and Reach (cm)	27.8	Enough
Wall Ball Test (Throw/Catch Per 30 Seconds)	18.6	Good

Aerobic endurance and muscle strength are in the good category, but leg flexibility and power are still relatively less than optimal.

#### 2. Anxiety Level Results (CSAI-2)

The CSAI-2 instrument is used with three dimensions: cognitive anxiety, somatic anxiety, and self-confidence.

Csai-2 Dimensions	Average Score	Category
Cognitive Anxiety	24.1	Tall
Somatic Anxiety	22.7	Medium–High
Self-Confidence	19.4	Low–Medium

Athletes exhibit relatively high levels of cognitive anxiety before competitions, accompanied by somatization (muscle tension, heart palpitations). Self-confidence is relatively low, affecting performance.

### 3. Interview Results

- The coach stated that some athletes still lack discipline in carrying out physical training programs.
- Athletes admit to often feeling nervous and burdened by expectations of qualifying for the PON, which reduces their focus.
- External factors such as the quality of opponents from other provinces also increase psychological pressure.

### 4. Statistical Analysis

- Correlation: There is a significant positive correlation between VO<sub>2</sub> max and match results ( $r = 0.62$ ,  $p < 0.05$ ).
- Negative correlation: Cognitive anxiety is negatively correlated with performance ( $r = -0.58$ ,  $p < 0.05$ ).
- Regression: The regression model shows that physical condition ( $\beta = 0.41$ ) and anxiety level ( $\beta = -0.37$ ) contribute to performance, with  $R^2 = 0.48$ .

## B. RESEARCH RESULT

### 1. PHYSICAL CONDITION

The results of the study indicate that aerobic endurance is an important factor for squash performance, in accordance with the findings of Minarni et al. (2019) that physical condition is significantly related to the performance of squash athletes.

Based on descriptive results, the average VO<sub>2</sub> max of South Sulawesi squash athletes was 47.4 ml/kg/minute, which is considered good for racquet sports athletes. This value indicates that most athletes have sufficient aerobic capacity to withstand high-intensity matches lasting 45–60 minutes. This aligns with Wiguna's opinion. (2023) said that good aerobic endurance is an important foundation in the sport of squash, because athletes are required to move quickly, continuously, and maintain consistent strokes throughout the match.

Muscle strength components measured through squat jumps and push-ups showed an average value of 46.5 for leg power (fair-good category) and 42 push-ups per minute (good category). These data indicate that upper body strength is relatively better than leg power. This condition requires attention because squash requires leg explosiveness for rapid jumps, changes of direction, and maintaining stability during shots. Research by Minarni et al.,

(2019) also emphasized that leg power contributes significantly to the effectiveness of movements in squash, especially in reaction speed to the ball.

Meanwhile, hand-eye coordination, measured using the wall ball test, averaged 18.6 times (good), indicating the athlete's coordination skills were sufficient to support shot accuracy. Overall, the physical data indicated the athlete was in good condition, but still had weaknesses in leg flexibility and power.

## 2. ANXIETY

The data shows that the average cognitive anxiety score for athletes is 24.1, which is considered high. This means that athletes tend to experience excessive worry about match results, coach expectations, and fear of failure. This condition aligns with the inverted-U hypothesis of Weinberg & Gould (2023), which explains that excessive anxiety will actually decrease athlete performance because it disrupts focus and concentration. Kusumawati & Mylsidayu (2015) also found something similar in Bekasi Porda athletes, where high cognitive anxiety had a direct impact on decreasing the accuracy of techniques and strategies. The average somatic anxiety component reached 22.3 (moderate-high category). This means that most athletes experience physiological symptoms before competing, such as muscle tension, heart palpitations, or irregular breathing. According to Hanin's Individual Zones of Optimal Functioning (IZOF), each athlete has a different optimal anxiety zone; however, if it exceeds the tolerance threshold, performance will decline (Hanin, 2000). This condition is important to note because squash is a high-intensity sport that demands simultaneous physical and mental focus, so somatic symptoms can interfere with effective movement on the court.

The athlete's self-confidence dimension was relatively low, with an average score of 19.0. This score indicates that athletes still lack confidence in their abilities to face opponents in the PON BK. Low self-confidence can be a major obstacle to sports performance, as demonstrated by research by Minarni et al. (2019), which confirmed that combining peak physical condition with high self-confidence significantly increases the chances of winning. Therefore, interventions in the form of mental training such as positive self-talk, visualization, and goal setting are crucial for improving athletes' self-confidence.

However, high cognitive anxiety can be a barrier. This aligns with the inverted-U hypothesis of Weinberg & Gould (2023), which explains that excessive anxiety actually decreases performance. Research by Kusumawati & Mylsidayu (2015) also supports that unmanaged anxiety impacts the performance of individual athletes. Relatively low flexibility is also important to consider, given that squash requires a wide range of motion to avoid injury and maintain movement efficiency (Wiguna, 2023).

Interview data indicates that psychological factors such as excessive expectations and competitive pressure remain major issues. Therefore, physical training programs should be integrated with mental training, such as relaxation training, positive self-talk, and pre-match simulation training.

### Conclusions

1. The physical condition of South Sulawesi squash athletes after the BK PON is in the good category, especially in endurance and strength, but leg flexibility and power still need to be improved.
2. The level of cognitive anxiety of athletes is in the high category, with moderate–high somatic anxiety, and relatively low self-confidence.
3. There is a significant relationship between physical condition and performance, as well as between anxiety and decreased performance.
4. Athlete performance is not only influenced by physical aspects, but also psychological aspects which must be handled with a special approach.

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