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The Relationship Between Lower Extremity Sports Injuries and Stress Levels Among SSB Bina Muda Players In Sukatani District, Bekasi Regency

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ABSTRACT

The Relationship Between Lower Extremity Sports Injuries and Stress Levels Among SSB Bina Muda Sukatani Players, Kabupaten Bekasi Sports injuries are a major factor affecting an athlete's physical and psychological condition. Lower extremity injuries are common among football players and can disrupt training sessions and matches. Stress is a physiological and psychological response to the pressure players face due to injuries. This study aims to examine the relationship between lower extremity sports injuries and stress levels among players at SSB Bina Muda Sukatani, Kabupaten Bekasi. This research employs a quantitative correlational design. The sample consists of 30 football players who have experienced lower extremity injuries. Data collection was conducted using the Functional Movement Screen (FMS) to measure injury levels and the Perceived Stress Scale (PSS) to assess players' stress levels. Data analysis involved normality tests, linearity tests, Pearson correlation tests, and simple linear regression analysis using SPSS 26 software. The results indicate a significant relationship between lower extremity injuries and stress levels, with a correlation coefficient of 0.573, categorized as a moderate correlation. The more severe the injury, the higher the stress level experienced by the players. The primary cause of injuries was insufficient warm-up before training and matches. Severe injuries tend to increase psychological stress, whereas minor injuries have a lesser impact on players' mental well-being. Based on these findings, it is recommended that players and coaches focus on injury prevention training, including proper warm-up routines, muscle-strengthening exercises, and stress management programs to minimize the psychological effects of injuries.

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B. Acquisition of data;
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INTRODUCTION

Football originated in England around the mid-13th century and has since become one of the world's most popular sports. Over time, it evolved into a structured game with

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standardized rules, and in 1904, the Federation Internationale de Football Association (FIFA) was established as the global governing body of football. Today, football is not only a competitive sport but also an industry with commercial potential.

Football is a game that requires high physical endurance, agility, and tactical intelligence. Players must maintain peak physical conditions to prevent injuries and perform optimally during training and matches. However, sports injuries, particularly those affecting the lower extremities, are common among football players.

Sports injuries occur during training, matches, or post-game recovery. These injuries can have short-term and long-term effects on athletes, affecting their physical performance, emotional well-being, and daily activities. According to research, injuries in football players often result from internal, external, and overuse factors. Internal factors include genetics, muscle structure, and insufficient warm-up, while external factors include collisions, poor training facilities, and weather conditions. Overuse injuries occur due to excessive physical strain over time.

Studies show that lower extremity injuries are the most prevalent among young football players. Research conducted in Yogyakarta, Indonesia, revealed that 19.4% of injuries involve knee joints, 13.2% affect toes, and 11.6% involve the thigh area. Another study found that 22.5% of football-related injuries affect the knee, highlighting its vulnerability due to its dual function as a movement and weight-bearing joint.

The psychological impact of injuries is also significant. Injured players often experience stress, anxiety, and emotional disturbances, which can affect their performance and mental well-being. Stress in athletes results from high expectations, performance pressure, and physical limitations due to injuries.

Thus, this study aims to investigate the relationship between lower extremity injuries and stress levels among football players at SSB Bina Muda Sukatani, Kabupaten Bekasi. The findings will help identify injury prevention strategies and stress management techniques for young athletes.

METHODS

Research Design

This study employs a quantitative correlational method aimed at analyzing the relationship between lower extremity injuries (independent variable) and stress levels (dependent variable) among players of Sekolah Sepak Bola (SSB) Bina Muda Sukatani, Kabupaten Bekasi. Correlational research is used to examine whether a relationship exists between variables and to determine the strength of that relationship.

Research Location and Duration

This research was conducted at Stadion Mini Sukatani, Kabupaten Bekasi, from September to November 2024. During this period, the researcher carried out observations, data collection, as well as data analysis and interpretation of research findings.

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Population

The research population includes all players of SSB Bina Muda Sukatani who train and compete regularly in Kecamatan Sukatani, Kabupaten Bekasi.

Sample

The study sample consists of 30 players selected using a purposive sampling technique. The sample criteria are:

1. Active players from SSB in Kecamatan Sukatani.
2. Age group U-16.
3. Participated in at least four external tournaments.

Data collection was conducted to measure lower extremity injuries and stress levels using validated measurement tools.

Operational Definitions

The variables used in this study are:

1. Independent variable (Lower Extremity Injuries): Injuries occurring in the lower limbs due to sports activities, measured using the Functional Movement Screen (FMS).
2. Dependent variable (Stress Level): Psychological conditions of players due to sports-related pressure, measured using the Perceived Stress Scale (PSS).

Instruments and Data Collection Techniques

Stress Levels

Stress levels were measured using the Perceived Stress Scale (PSS), which consists of several questions related to athletes' stress experiences over the past month. The obtained scores are classified as follows:

1. <20: No stress.
2. 20–24: Mild stress.
3. 25–29: Moderate stress.
4. 30: Severe stress.

Lower Extremity Injuries

Lower extremity injuries were assessed using the Functional Movement Screen (FMS), which evaluates athletes' movement abilities. The FMS scores are classified as follows:

1. 21: No injury.
2. 17–20: Mild injury.
3. 14–16: Moderate injury.
4. <14: Severe injury.

Data Analysis

The collected data were analyzed using statistical software to examine the relationship between injuries and stress. The analysis includes:

Descriptive Statistics: This method is used to summarize sample characteristics, including mean, standard deviation, maximum and minimum values.

Inferential Statistics: Normality Test: Using the Kolmogorov-Smirnov method to ensure that data distribution is normal.

Linearity Test: Using analysis of variance (*ANOVA*) to assess the linear relationship between lower extremity injuries and stress levels.

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Simple Linear Regression: Used to evaluate the effect of injuries on stress using the regression equation: where *Y* represents stress levels, *X* represents lower extremity injuries, *a* is the constant, and *b* is the regression coefficient.

Pearson Correlation Test: Measures the strength of the relationship between two variables with *r* values categorized as follows:

1. 0.00 – 0.199: Very low.
2. 0.20 – 0.399: Low.
3. 0.40 – 0.599: Moderate.
4. 0.60 – 0.799: Strong.
5. 0.80 – 1.000: Very strong.

F-Test (Simultaneous): Examines the simultaneous effect of independent variables on the dependent variable by comparing probability values with a significance level of 0.05.

Coefficient of Determination (R^2): Indicates how much the independent variable influences the dependent variable in the regression model.

Research Flow

Preparation Stage :

1. Literature review.
2. Proposal drafting and submission.
3. Supervisor approval.

Data Collection

1. Determining population and sample.
2. Preparing research instruments.
3. Conducting validity and reliability tests.
4. Collecting data from samples.

Data Processing and Analysis

1. Inputting data into statistical software.
2. Performing descriptive and inferential analysis.
3. Conducting normality and linearity tests.
4. Conducting hypothesis testing using Pearson correlation and linear regression.

Reporting Results

1. Compiling research reports.
2. Drawing conclusions and recommendations.
3. Presenting research findings.
4. Revising reports if necessary.

Final Stage

1. Publishing research results.
2. Implementing research recommendations.

Conclusion

This research methodology is designed to ensure valid and reliable results in identifying the relationship between lower extremity injuries and stress levels among young football players. Through a quantitative correlational approach, this study

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provides insights into injury risk factors and their psychological impact on athletes while offering recommendations for better injury prevention and management.

RESULTS AND DISCUSSION

This chapter presents the research findings and discussions regarding the relationship between lower extremity sports injuries and stress levels among players of Sekolah Sepak Bola (SSB) Bina Muda Sukatani, and Bekasi Regency.

Research Findings

This study collected data from 30 players of SSB Bina Muda Sukatani, focusing on the severity of lower extremity injuries and the associated stress levels.

Lower Extremity Injuries Based on the research findings:

1. 6.7**%** of the players did not experience any injuries.
2. 16.7**%** suffered from minor injuries.
3. 63.3**%** experienced moderate injuries.
4. 13.3**%** suffered from severe injuries.

From the descriptive statistical analysis, the overall category of lower extremity injuries among players falls into the moderate injury level.

Stress Levels

Regarding stress levels:

1. 6.7**%** of players did not experience stress.
2. 23.3**%** experienced mild stress.
3. 56.7**%** experienced moderate stress.
4. 14.3**%** suffered from severe stress.

Based on the statistical analysis, the overall stress level among players is categorized as **moderate stress.**

Descriptive Statistical Analysis

To understand the relationship between the two variables, statistical analysis was performed on the collected data. The mean score for lower extremity injuries was 15.83 with a standard deviation of 1.599, while the mean score for stress levels was 26.23 with a standard deviation of 3.370.

Hypothesis Testing

To verify the relationship between lower extremity injuries and players' stress levels, several statistical tests were conducted:

Normality Test

The Kolmogorov-Smirnov normality test showed that the significance value for lower extremity injuries was 0.108 > 0.05, and for stress levels, it was 0.149 > 0.05. This indicates that the data in this study follow a normal distribution.

Linearity Test: The linearity test results showed that the relationship between lower extremity injuries and stress levels is linear, with a significance value of 4.622 > 0.05.

Correlation Test: The Pearson correlation test found that the relationship between the two variables had a correlation value of 0.573, which falls within the 0.40–0.599 interval, classifying it as a moderate correlation.

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Regression Test: The regression test results showed that F calculated = 100.192, with a significance level of 0.000 < 0.05, meaning that the regression model can be used to predict the relationship between lower extremity injuries and stress levels.

Discussion of Research Findings

From the analysis, it was found that the more severe the injury, the higher the stress level experienced by the players**.** Injuries contributed to increased stress due to both physical discomfort and psychological pressure from the inability to perform optimally. Overall, the relationship between lower extremity injuries and stress levels is positively correlated. This means that as the severity of the injury increases, the stress level also tends to rise. Conversely, players with minor injuries experience lower stress levels. The study also revealed that inadequate warm-ups before training or matches were a major cause of injuries. Players with severe injuries tended to develop psychological trauma, making them more cautious in future games to avoid re-injury. On the other hand, players with minor injuries recovered quickly and were less affected psychologically.

CONCLUSION

The results indicate a significant relationship between lower extremity injuries and stress levels, with a correlation coefficient of 0.573, categorized as a moderate correlation. The more severe the injury, the higher the stress level experienced by the players. The primary cause of injuries was insufficient warm-up before training and matches. Severe injuries tend to increase psychological stress, whereas minor injuries have a lesser impact on players' mental well-being. Based on these findings, it is recommended that players and coaches focus on injury prevention training, including proper warm-up routines, muscle-strengthening exercises, and stress management programs to minimize the psychological effects of injuries.

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