



# Ideridentification of Injury in Pss Development Players Sleman U16 – 18

Rizky Wulandari<sup>(✉)</sup> and Nurwahida Puspitasari

Universitas Aisyiyah Yogyakarta, Yogyakarta, Indonesia  
Rizkywulan.fisio@gmail.com

**Abstract.** The incidence of injuries to football players continues to increase by two percent every month. The process of healing injuries to athletes takes a long time about 2–3 months, while soccer players follow every match. This causes a lack of player performance due to injury. Prevention efforts are a reference that reduces the impact of injuries on soccer players. Therefore, it is necessary to study related to football players. Objective: Determining the factors that influence the occurrence of injuries to soccer players, especially the development of PSS Sleman aged 16–18. Research Methodology: Field Study Research with total sampling, which describes the percentage of injuries to PSS Development players. The instrument uses interview assessments and measurements using specific measurements with APECS. Results: The incidence of Sprain Ankle Injury is 52.5%, Hamstring Injury is 25%, and ACL Injury is 22.5%. Specific examination with APECS found that 38 out of 40 players had musculoskeletal disorders with a percentage of 95%. The correlation test between posture and incidence with Kendall's tau-b was found to be  $p = 0.037$ . Conclusion: There is an incidence of injury to football players and a relationship between musculoskeletal disorder and injury to soccer players.

**Keywords:** injuries · PSS development · and musculoskeletal disorders

## 1 Introduction

Football is a sport that requires good balance and flexibility, so football players need to have skills in directing the ball and preparing components in movement such as ligaments, and joints. The forces that occur on the muscle structure during activity can cause indirect injury if these components are not integrated properly. This usually occurs in areas of muscles, tendons, ligaments, joints, and bones. Meanwhile, indirect injuries occur generally both at the beginning and end of the match due to errors in the warming up (or even without warming up), poor flexibility, or fatigue factors. In addition to physical contact and indirect injury, other factors that causes injury are excessive loads or repetitive loads.

Currently, PSS Development Sleman is competing in Liga 1 Indonesia, the highest division in Indonesia. As a club that is required to become more professional, PSS Development Sleman makes improvements in various fields, one of which is in the field of Development Programs at an early age, namely PSS Year 16 and PSS Year 18. Athletes

need physical exercise with high intensity, to achieve physical conditions that match the needs of a football athlete. However, in high training sessions, an athlete cannot be separated from injury, either during training or during competition.

In addition, this type of injury is also caused by errors during training, abnormalities in biomechanics, sports equipment for example shoes, or bad courts. Errors in training, among others, occur during warm-up, excessive training load, exercise duration that is too long, frequency or intensity of exercise, and errors in injury rehabilitation. Meanwhile, abnormalities in biomechanics such as different leg lengths between the right and left legs, inflexible soft tissues (muscles and tendons), biomechanics misalignment, and joint stiffness. Injuries to the metatarsals, calf bones, and shins are the focus of injuries caused by pitch quality. The injuries above were also experienced by PSS Development soccer players. According to Rahman (2017), the most common injuries to football players are ankle injuries 53.1%, arms and legs 27.55%, and fractures 11.5%. Field observations made by the researcher, many athletes suffered injuries after matches and during training, among others, ankle injuries 57%, knee injuries 13%, and leg cramps 30%. Based on the phenomena, it is necessary to study it as a preventive measure.

## 2 Method

This study is a descriptive study using a retrospective approach. This study describes the percentage of sports injuries and musculoskeletal disorders in football players. The population in this study were PSS Development players aged 16–18 years in Yogyakarta. The sample in this study was 40 members of PSS Development. Players received a questionnaire containing the players' experience with an injury and a specific examination using APECS.

This study processed the data using univariate analysis with several characteristics of the respondents and bivariate analysis with the Kendall's Tau test using SPSS Statistics 22.0 provided that if the P value < 0.05, it is significant.

## 3 Result and Discussion

The results of the study (in Table 1) show that 80% had a history of injury and 20% had no history of injury. The types of injuries in this research were 52.5% ankle sprains, 25% hamstring injuries, 22.5% ACL injuries, and 95% potential for musculoskeletal disorders in football players. Based on Kendall's tau-b correlation test output Table 2, it is known that the significance value between musculoskeletal disorder and the incidence of injury is  $0.037 < 0.05$ , so it means that there is a significant relationship between musculoskeletal disorder and the incidence of injury in soccer players .

Based on the results of the specific examination and analysis of the questionnaire, the football player was injured. The wrong activities result in changes in body position. Incorrect sports movements lead to the potential for several injuries in sports. Injuries often occurred by beginners who are ambitious to complete the training target. [5] adds that the wrong body position is one of the risk factors for injury because it can increase pressure on tissues such as muscles, ligaments, and bones. For a long period, this condition causes a shift in body posture due to motion compensation.

**Table 1.** CHARACTERISTICS OF RESPONDENTS

<i>Characteristics</i>	<i>Result (n = 40)</i>
Injury Incident	
Yes	32 (80%)
No	8 (20%)
Type of Injury	
Sprain Ankle	21(52,5%)
Hamstring Injury	10 (25%)
ACL Injury	9 (22,5%)
Potential for Musculoskeletal Disorder	
Yes	38 (95%)
No	2 (5%)

**Table 2.** MUSCULOSKELETAL DISORDER CORRELATION WITH THE INCIDENCE OF INJURY

<i>Characteristics</i>	<i>Correlation Coefficient</i>	<i>P Value</i>
Musculoskeletal Disorders and Incident of Injury	0,336	0,037

The most common football player injury is an ankle sprain. Sprain ankle injuries are related to overstretching of the complex lateral ankle ligaments with sudden inversion and plantar flexion that occurs when the foot is not fully supported on the floor or ground, especially on uneven ground or floor surfaces. The ligaments of the lateral ankle include the anterior talofibular ligament which functions to resist movement in the direction of plantar flexion. The posterior talofibular ligament has a function to resist movement toward inversion. The calcaneocuboid ligament serves to resist movement in the direction of plantar flexion. The talocalcaneal ligament functions to resist movement toward inversion and the calcaneofibular ligament functions to resist movement towards inversion [1].

Ankle injuries are caused by sudden movements to the outside/side (lateral) or inside/middle (medial) side of the ankle. This results in an invasive sprain, the leg turns and/or bends inward and reverses. [2] explains ankle injury is the most common injury to the ankle because of a large amount of stabilizing bone on the sides which causes the pressure on the foot to reverse. If there is a great force, bending of the foot occurs at the medial malleolus causing damage to large objects and creating a fulcrum for more than the foot. When the muscle fibers of the ligaments are permanently strong to withstand or resist the forces of inversion, the ligamentous fibers of the side are not compressed or torn.

There is about 95% of football players have musculoskeletal disorders. The condition can occur due to repetitive movements or work over a long period or working with an

awkward body position that is sick with symptoms that can be felt at work or when not doing the work activity. Disorders of the musculoskeletal system never occur directly, but are a collection of small and large impacts that accumulate continuously over a relatively long time, can be in a matter of days, months and years, depending on the severity of the trauma each time and at any time, so that it can cause a large enough injury which is expressed by pain, tingling, aches, tenderness, and swelling.

The correlation test shows that there is a significant relationship. This is related that musculoskeletal disorders are chronic and cause damage to tendons, muscles, ligaments, joints, and cartilage usually causing a decrease in function. Disorders of the musculoskeletal system rarely occur directly but are an accumulation of minor and major symptoms that last continuously for a relatively long time. [3] states there is a significant relationship between musculoskeletal disorders and the occurrence of injuries to athletes, an imbalance in body posture causes muscles to move not synergistically, and this lack of synergism causes a greater potential for injury when athletes are playing.

This is in line with [4] good posture results in natural body movements, meaning that they move according to body biomechanics and anatomy and physiology of the body. In football athletes, it becomes very important, because natural movements result in increasing player skills and also the performance of soccer players.

## 4 Conclusion

The conclusion from the results of this study is the occurrence of injuries to football players, the most injuries are athletes experiencing ankle sprains, and musculoskeletal disorders, and obtained a correlation between musculoskeletal disorders and the incidence of injuries in football players.

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