

Sports injuries of second-league female and male football players

Authors' Contribution:

- ✍ A Study Design
- 📁 B Data Collection
- 📊 C Statistical Analysis
- 📄 D Manuscript Preparation
- 📁 E Funds Collection

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Abstract

Background and Study Aim:

Football is one of sports that causes most injuries throughout the world. The reasons vary, because competition in football very often becomes fierce. The objective of the study was answer the questions which injuries are most frequently sustained by female and male football players, circumstances in which injuries are sustained, how an injury and long recovery time may affect sports career, health and life outside of the football field.

Material and Methods:

The study enrolled randomly selected 114 individuals, including 76 females and 38 males from 6 voivodeships who participated in the second league matches in 2016/2017. The average age of the respondents was 26, with the youngest male player being 17 and the oldest female player being 41. A questionnaire was developed for the purposes of the study.

Results:

The study revealed that most common injuries in football setting were joint sprains, bone fractures and muscle problems. Lower extremities were usually more prone to sports injury, which affected nearly all football players from the field. Injuries were sustained primarily during the season at matches. Treatment of complete tear of ligaments and Achilles tendon lasted for the longest time. Recovery to regain full fitness from before the injury is a long and arduous rehabilitation process for everyone. Support from the loved ones is very important in this time. Brutality is the most common cause of injuries. A decision to end football career was mostly taken due to fear of one's life, mental injury, reaction of loved ones and medical opinion. Most of the injured were removed from the team by the coach.

Conclusions:

In summary, every injury sustained by an athlete affects their mental status to a lesser or greater extent. It depends on the personality and approach of the injured ones, how and when they will cope with it and come back to physical activity. The coach and coach's attitude should be one of the main factors playing role in player's return to sport

Key words:

direct sports combat • football • mental trauma • rehabilitation

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Player – *noun* someone taking part in a sport or game [34].

Injure – *verb* to hurt someone or a part of the body [34].

Sports injury – *noun* any injury incurred as a result of taking part in sports, e.g. a sprain, shin splints or tendinitis [34].

Injury mechanism *noun* the way in which a casualty sustained his or her injury, e.g. in a fall or collision, which may help with diagnosis and treatment decisions [34].

Trauma – *noun* **1.** a wound or injury **2.** a very frightening or distressing experience that gives a person a severe emotional shock [34].

INTRODUCTION

Football is a dynamic game, full of twists and turns, which places a heavy burden on football player's body. Direct contact with a rival is an integral part of every match. Numerous slide tackles, jumps, changes of running direction and clashes with a rival may lead to a direct or an indirect injury [1, 2]. The reasons vary, because competition in football very often becomes fierce. Football is one of sports that causes most injuries throughout the world [3-6]. Football has become in a sense a kind of combat sport. Behaviours displayed by players that do not comply with fair-play regulations often turn out to have tragic consequences for their health [7, 8].

Sports injuries are often sustained during a football match. The term 'sports injury' is a common name for all injuries sustained during physical activity [9, 10]. This happens most often during competitions but also at trainings. Consequently, a player is periodically or completely removed from further football trainings. Mechanical energy is the reason for most sports injuries [11, 12]. Joint sprains with partial or total ligament rupture are some of the most common injuries on a football field. Two joints, ankle and knee, are mainly affected [13-16].

The following injuries are sustained while playing football: joint sprains and ligament strains, muscle and tendon injuries, contusions, joint dislocations, bone fractures, skin abrasions, wounds, infections, inflammations [17, 18]. These traumas mainly result from injuries sustained in direct sports combat, injuries and overloads while training (incorrectly performed exercise, too large loads, incorrect warm-up, etc.), physical activity undertaken too soon after prior injury or illness, faulty sports equipment (footwear, protective

equipment), inadequate condition of the sports field or sports facility, difficult weather conditions, other reasons, e.g. fault of fans [19, 20].

A noticeable increase in the number of injuries sustained while playing football has been observed. This is due to the fact that most football players are not sufficiently prepared in terms of their physical fitness [21, 22]. Apart from work and household chores, they spend a lot of time on football training. They unknowingly overstrain their body, combining all these elements together and forgetting about recovery [23, 24]. Mechanism of injuries sustained by a professional athlete consists in an unfortunate contact with an individual/device or results from fatigue or overtraining of the body.

The objective of the study was answer the questions which injuries are most frequently sustained by female and male football players, circumstances in which injuries are sustained, how an injury and long recovery time may affect sports career, health and life outside of the football field.

MATERIAL AND METHODS

Participants

Subjects of the study consisted of female and male players from 6 voivodeships who participated in the second league matches in 2016/2017. The study enrolled randomly selected 114 individuals, including 76 females (67%) and 38 males (33%). The average age of the respondents was 26, with the youngest male player being 17 and the oldest female player being 41. The majority of respondents are aged from 21 to 25. A large number of respondents are aged from 26 to 30.

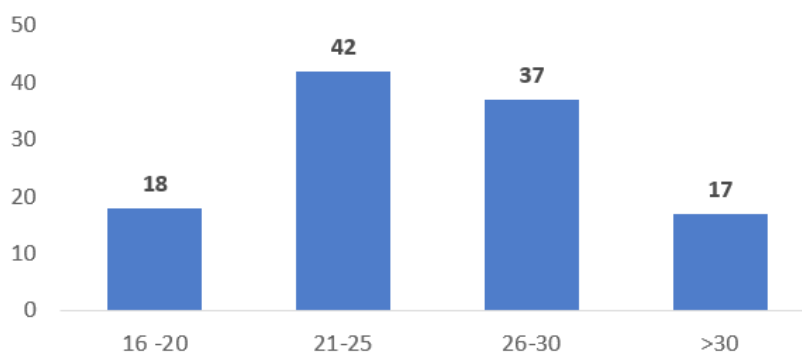


Figure 1. Age of respondents.

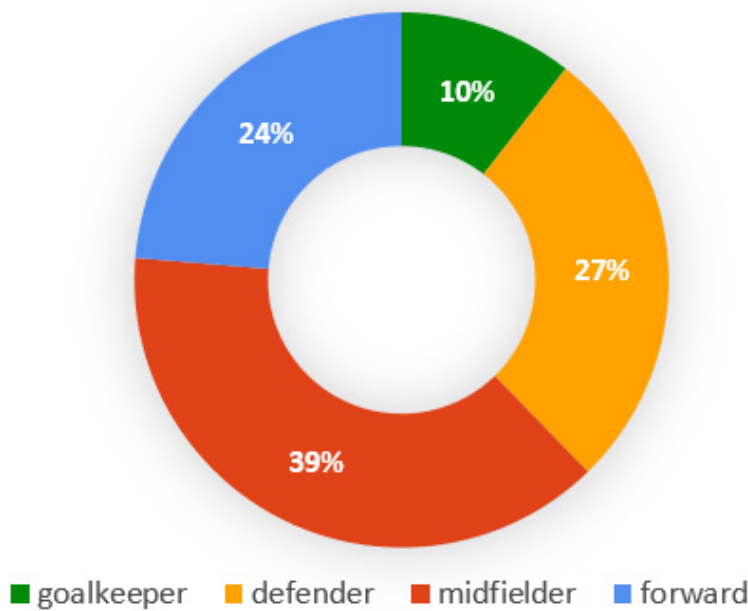


Figure 2. Answer the question: *What is your position on the field?*

Quantitatively, the “oldest” ones are comparable to the “youngest” ones (Figure 1). The forwards were the most numerous (39%), the goalkeepers (10%) were the least numerous (Figure 2).

Research tool

A survey questionnaire was used in the study. A survey was a research tool developed for the purposes of the study. Each respondent had answer questions provided in the questionnaire.

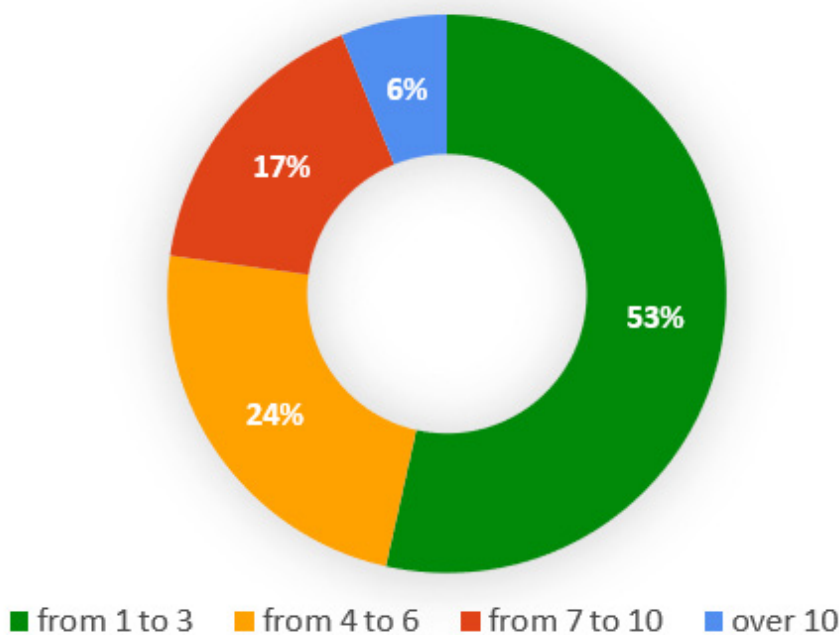
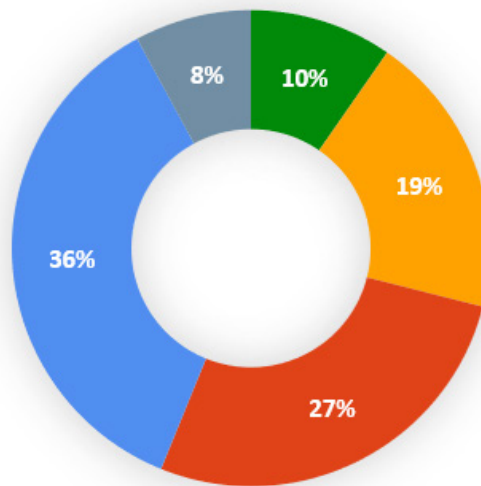


Figure 3. Number of injuries.



■ over a week ■ over a month ■ over 3 months ■ over 6 months ■ over a year

Figure 4. Time during which the respondents did not play football.

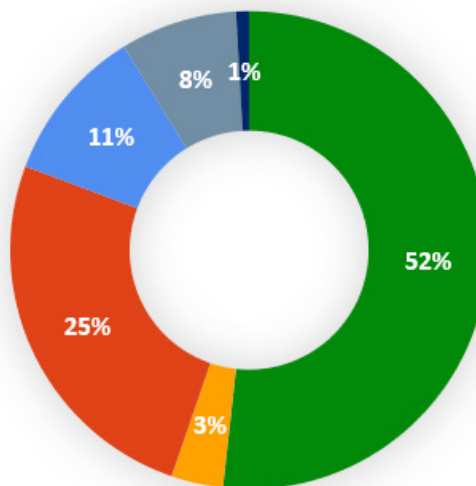
RESULTS

It turned out that midfielders were most prone to injuries at the football field. Comparative results were obtained by defenders (27%) and forwards (24%). Over half of the respondents sustained from 1 to 3 injuries. More than 10 injuries, because of which they could not play for over one week, were sustained by 6% of respondents (Figure 3).

Most respondents had to stop training due to an injury for over half a year (36%) and 27% of respondents had a minimum three-month break

(Figure 4). According to the raw survey results, individuals who gave these two answers suffered from sprained joints or severe bone fractures. 8% of players stopped training due to ruptured Achilles tendon or ruptured knee ligaments. Minor injuries due to which the players had to stop training for over a week account for 10%. 19% of players could not train for over a month.

Most injuries were sustained during the season, during a league match. Such injuries accounted for 52%. A quarter of respondents pointed to training.



■ league match ■ cup match ■ training ■ warm-up ■ sports camp ■ other

Figure 5. Answer the question: *During which game did you sustain your injury?*

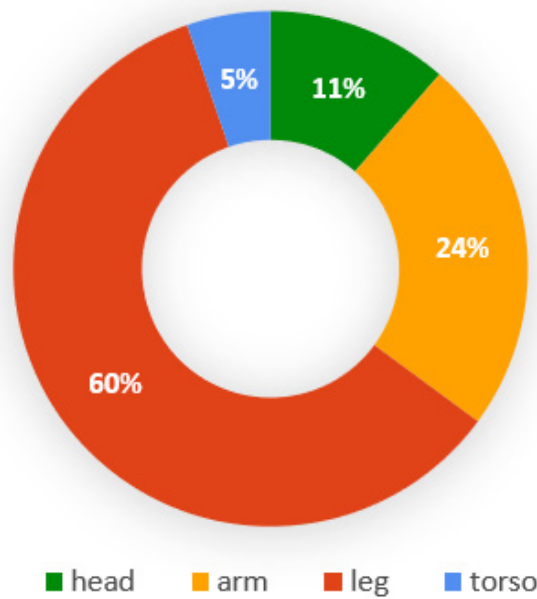


Figure 6. Injured body region.

Injuries sustained during warm-up and a sports camp were of similar incidence, accounting for 11% and 8%, respectively. This answer was mainly provided because equipment and its load were poorly fitted to one’s capacity. Cup matches (tournaments) accounted for the smallest percentage (3%). Answer “other” meant university classes (Figure 5).

A lower extremity was a body part that was most vulnerable to injuries (60%). An upper extremity was selected by 24% of the respondents.

Individual questionnaires show that this answer was provided by nearly 100% of goalkeepers. Head injuries accounted for 11%. Torso is injured the least frequently, with 5% of all answers (Figure 6).

Joint sprain was the most common injury sustained by the respondents (42%). It is followed by bone fractures (29%). Muscle injuries were sustained by 20% of the respondents. Inflammation was the least frequent condition (6%) (Figure 7).

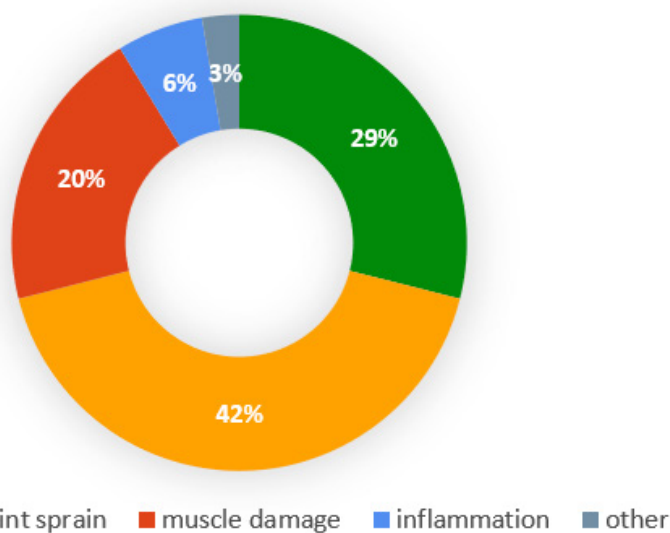


Figure 7. Body injury type.

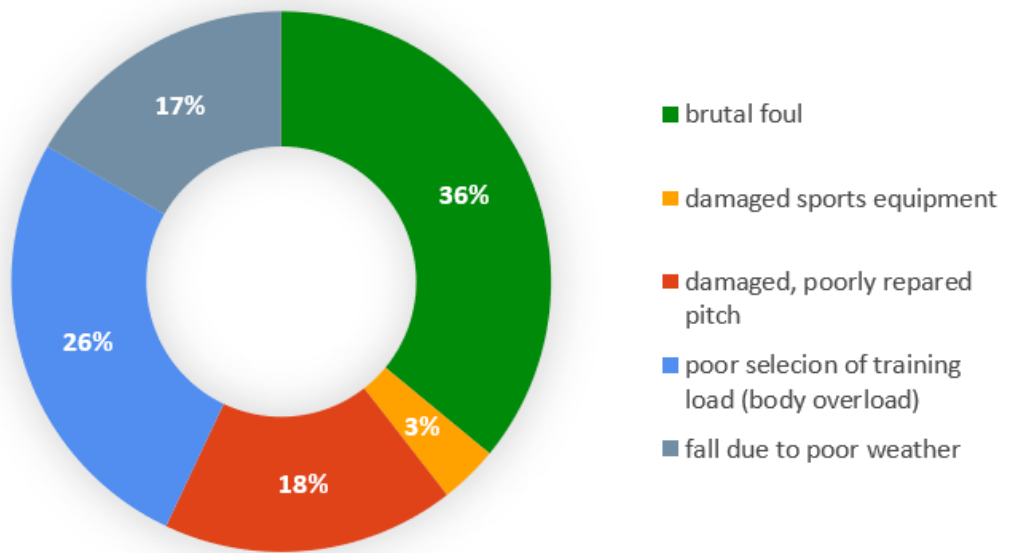


Figure 8. Cause of injury.

A brutal foul was listed by 36% of the respondents as the main cause of injury. The second most frequent cause was that load did not fit players' capacities. The resulting overloads often lead to micro-injuries and, consequently, a serious injury in the nearest future. Damaged pavement and falls during the game due to weather conditions accounted for 18% and 17% of causes, respectively. Usually, leg sprains and numerous muscle injuries (partial or complete tear) were sustained when a match was played in the rain. Merely 3% of responses were assigned to damaged sports equipment (Figure 8).

In case of 43% of the respondents emergency medical services were called immediately after an injury. One third of the respondents failed to finish the match but also did not report immediately to a doctor. Exacerbating pain made it impossible to function, which is why a medical appointment was invaluable. Team physiotherapist helped 15% of players. In further steps they did not undergo a thorough medical examination. As many as 8% of respondents completed the training/match, which is why they could sustain more micro-injuries, and thus a serious injury in the nearest future (Figure 9).

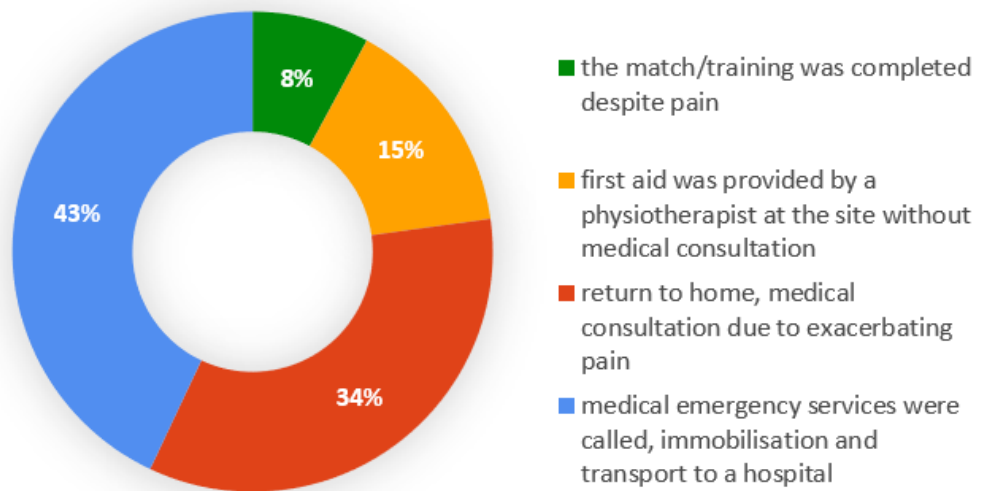


Figure 9. Actions taken immediately after the injury.

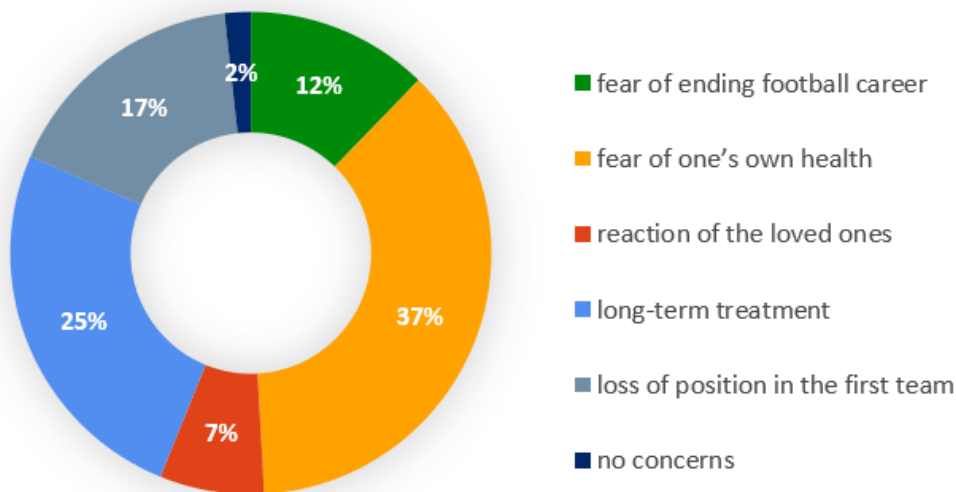


Figure 10. First thought after an injury.

Only 19 of 114 respondents fear of losing their place in the first team, while 14 of them are afraid that they will have to end their career because of the injury suffered. A small number, i.e. 8 respondents assumed that they were afraid of the reaction of their loved ones, and only 2 individuals decided that they were not afraid at the time of injury. The largest number of respondents, as many as 42 individuals, selected the second answer (fear of their health). Twenty-nine players are afraid of a long-term treatment (Figure 10).

As many as 56% of the respondents were diagnosed with joint sprain after medical examination.

More precisely, 33% suffered from partial ligament tear and 23% sustained complete tear of these structure. The same percentage of players suffered from bone fractures (23%). Muscle rupture or tear was sustained by 13% of the respondents. Concussion caused by a fall or collision with an opponents was listed by 5% of the respondents. Achilles tendon rupture, being the one of the worst diagnoses, was diagnosed in 3% of players (Figure 11).

A physician turned out to be the first person who provided information about treatment and future sports career for 58% of respondents.

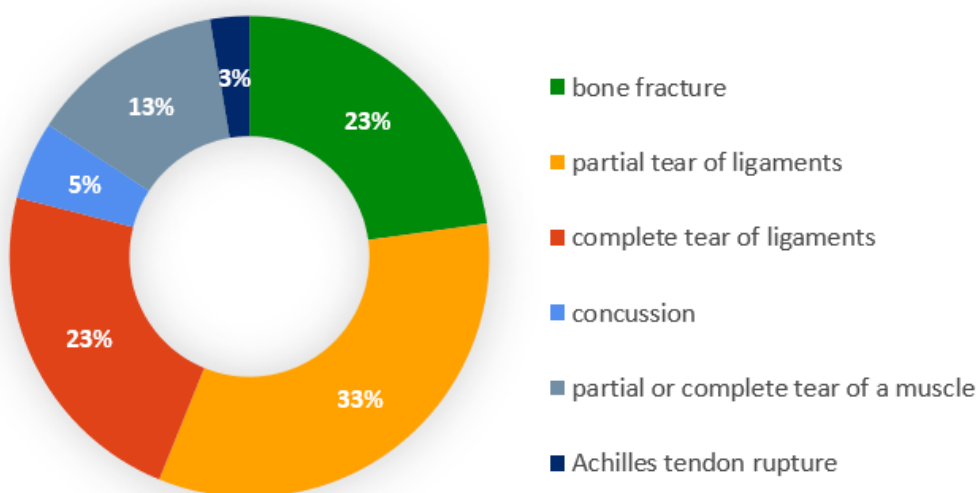


Figure 11. Answer the question: *Do you remember the exact diagnosis?*

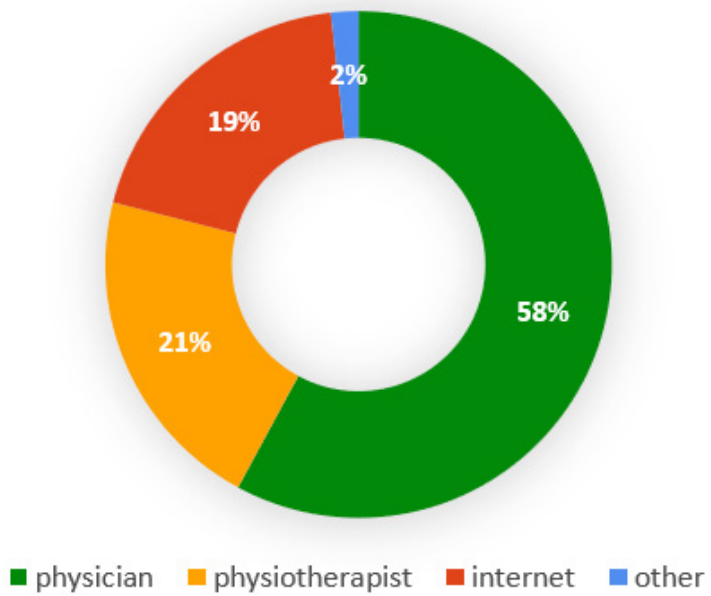


Figure 12. Source of information about treatment.

Twenty-one percent of participants benefited from the physiotherapist's knowledge. 19% of respondents received first information about their condition from the Internet. "Other" sources of information were listed by 2% of the respondents. In this case, first information were provided by acquaintances who sustained a similar or the same injuries (Figure 12).

Up to 68% of all female and male players required surgical and orthopaedic intervention after an injury. The remaining 32% did not need a major surgery. No anaesthesia was necessary (rehabilitation is a long and arduous process in the life of an injured athlete). Most of the injured were removed from the team by the coach. This group consisted of 88 respondents. Only in 26 cases the

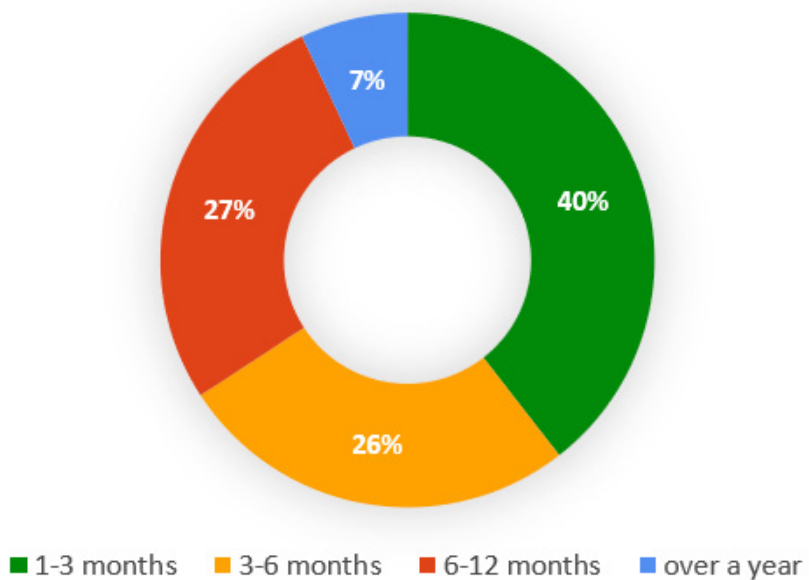


Figure 13. Length of rehabilitation.

coaching staff made the injured player involved in the team's life in every possible way. Such players mentally recover faster as they know that the team needs them and the team counts for their faster come back.

Forty percent of the respondents completely recovered within 1 to 3 months. Usually they

suffered from uncomplicated bone fractures, muscle injuries and head injuries. A comparable percentage was noted in case of 3-6 months and 6-12 months, with one percent more for the latter one. Such period of time results from ligament reconstructions and complicated bone fractures, 7% of female and male players recovered completely for over a year (Figure 13).

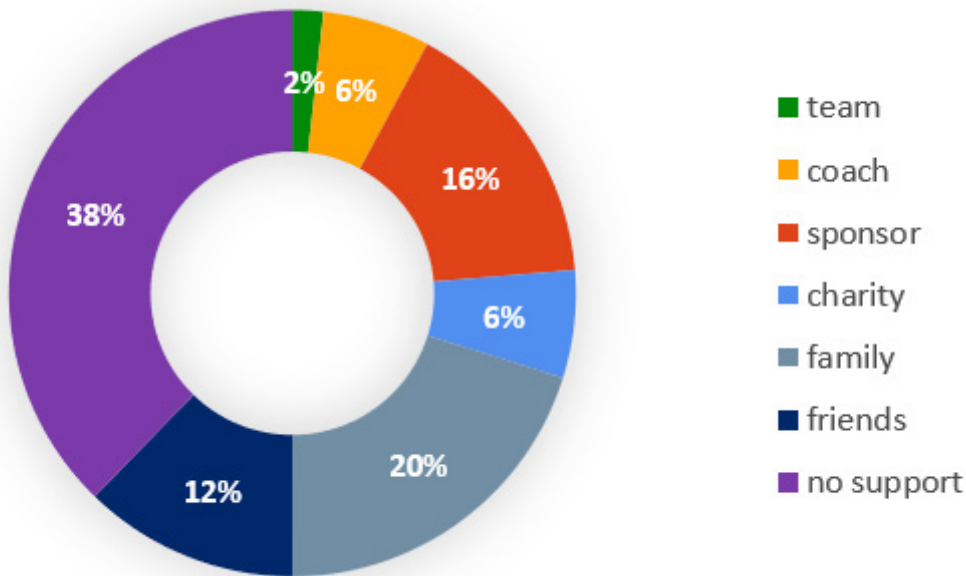


Figure 14. Financial support (answer the question: *Who did you get greatest financial support during rehabilitation from?*).

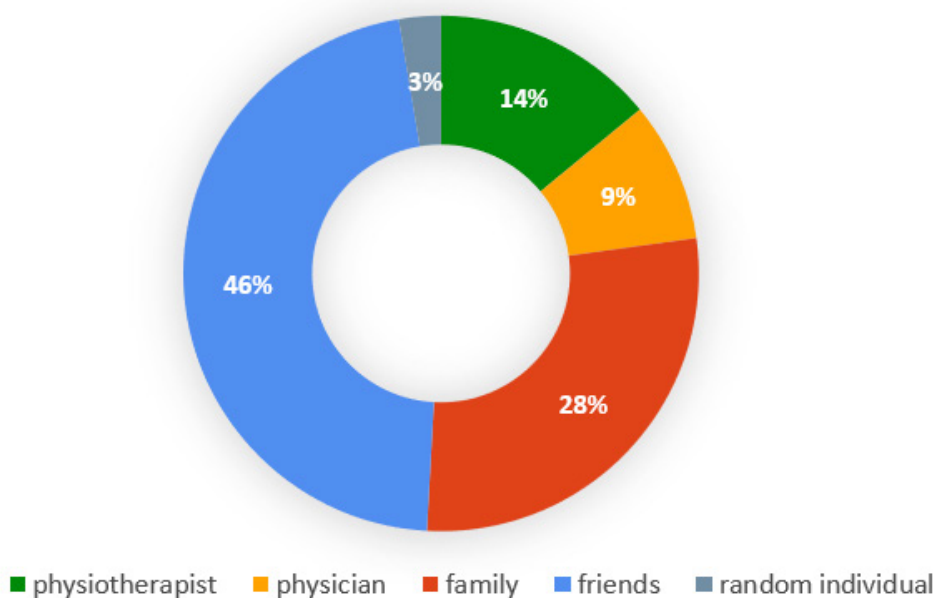


Figure 15. Greatest motivation (answer the question: *Who motivated you the most during rehabilitation?*).

Material aid is an important thing during rehabilitation. In Poland, a patient has to wait for several months for reimbursed rehabilitation. Thirty-eight percent of injured respondents did not receive any material aid. In 20% of cases family was the only source of support. Third parties, i.e. sponsor or charity, accounted for 16% and 6%, respectively. Friends supported 12% of the respondents. The coach and team provided the player with assistance only small percentage of cases (Figure 14).

Greatest psychological support was shown by friends of an injured player (46%). Family, i.e. the closest people to the players, motivated 28% of the respondents. The physiotherapist of the injured person was the third among the respondents. Such person restored physical health and mental health with a good word and positive thinking. A physician turned out to provide the greatest motivation for 10 players (9%) (Figure 15).

Forty eight percent of female and male football players needed up to 3 months to regain their optimum form after treatment and rehabilitation. Twenty nine percent of respondents resumed playing at the optimal level only after half a year of training. For 16% of players, 30 days turned out to be the right time to get back into shape. The most severe injuries resulted in the fact that 7% of the respondents needed a year to regain their ideal form (Figure 16).

Over half of the respondents, i.e. 56%, regained their form from before the injury and 44% found it too difficult to play at high level. This may be caused by several factors, such as mental trauma, making it more difficult to play for the player even to a small extent, loss of place in the first team for a long time, etc. Seventy percent of respondents use auxiliary equipment while training. It is the most helpful after ankle and knee joint injuries for their better stability. The remaining ones did not need such equipment. They continue their career without any protection.

Most players train football because they feel the need to succeed and be satisfied with the victory. This observation was confirmed among the respondents. Over half of female and male football players returned to the field after injury, because they felt a great desire to succeed. The team, and a feeling of belonging to it, had a huge influence on 35% of them. It may be concluded that the injured is one of the main pillars and has a positive effect on the atmosphere in the cloakroom, football field and beyond them. For some respondents football was the only source of income. In 9% of cases money motivated players to return to the field. Such answer was given only by professional football players (Figure 17).

Fear of re-injury was shown by 61% of the respondents. Their play will probably not be the same as before the injury. This can change if they feel 100% confident at the football field. Thirty-nine percent

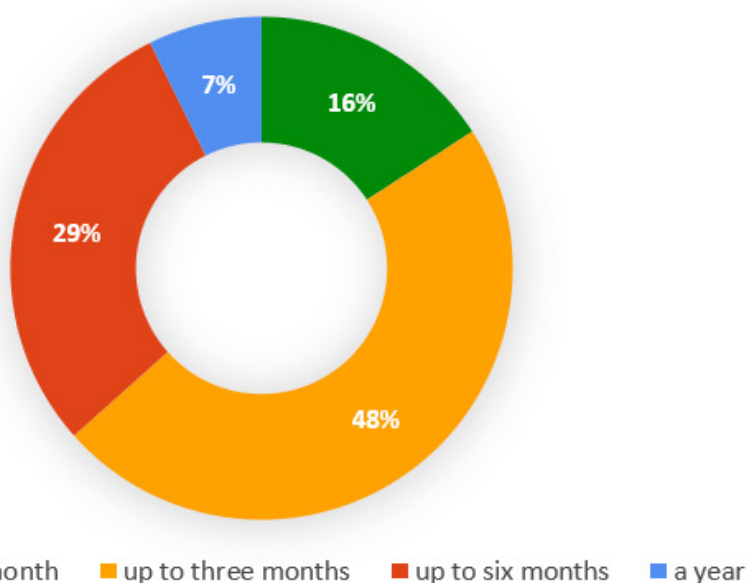


Figure 16. Time needed to regain optimum form.

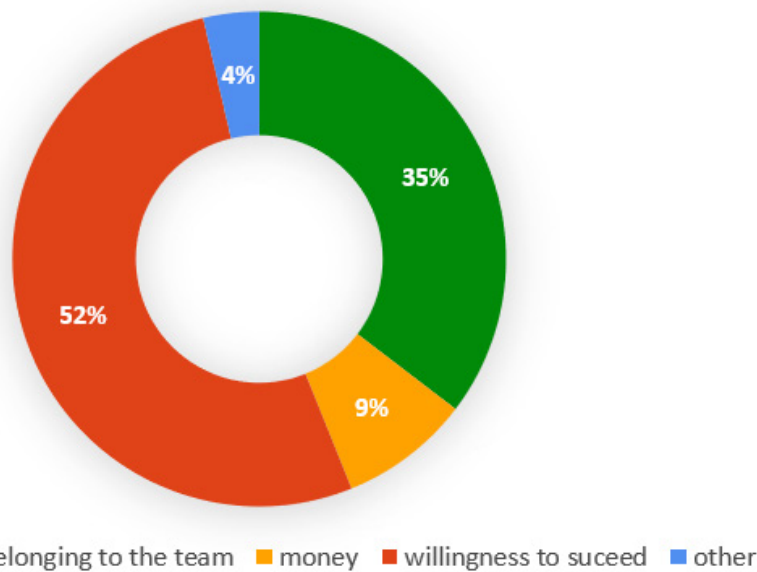


Figure 17. Purpose of returning to the field.

managed the mental side of injury. Sixty seven percent of respondents did not think about ending their career after they returned to the field. The remaining players were thinking about their decision, perhaps this is due to some fear of the injury.

It took up to three months for 38% of the respondents to return to optimal pre-injury health. Thirty-one percent of football players needed one month. A quarter of the respondents recovered

for six months. One year was the longest time needed (6%) (Figure 18).

Over half of the respondents (53%) would not risk returning to the field after an injury. It seems that an injury was a traumatic experience for them that will remain in their memory for a long time. 19% of respondents would take such a risk out of love for football. Those who do not know account for 28% (Figure 19).

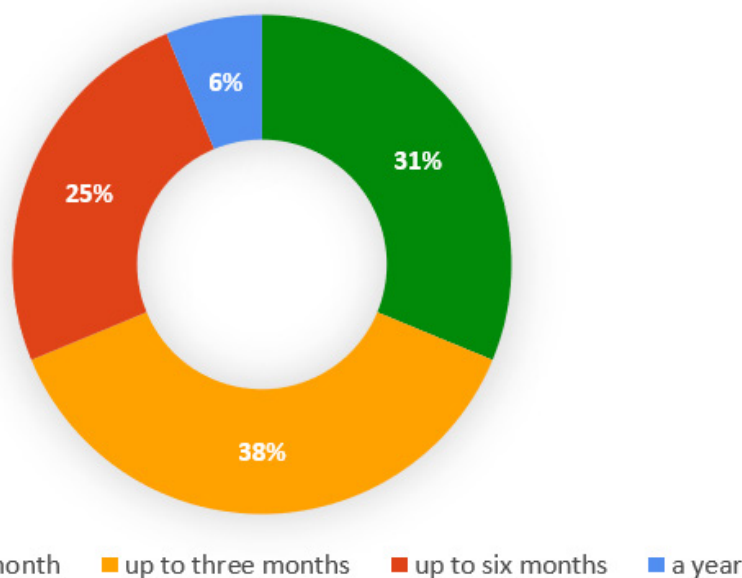


Figure 18. Time needed to regain optimum health.

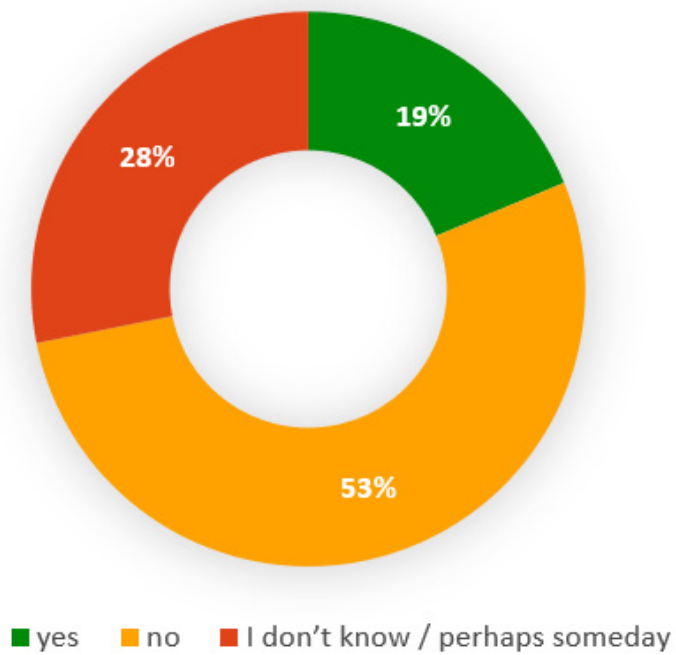


Figure 19. Probability of returning to football.

Forty-four percent of the respondents ended their football career because they feared of their health. Sixteen percent of the players gave up playing and started professional career in a different field. Family had impact on 12% of players. The same number

of respondents ended their career because of their diagnosis. Psychological trauma and unpleasant experiences related to injury and rehabilitation were the main factors taken into account by 13% while making a decision (Figure 20).

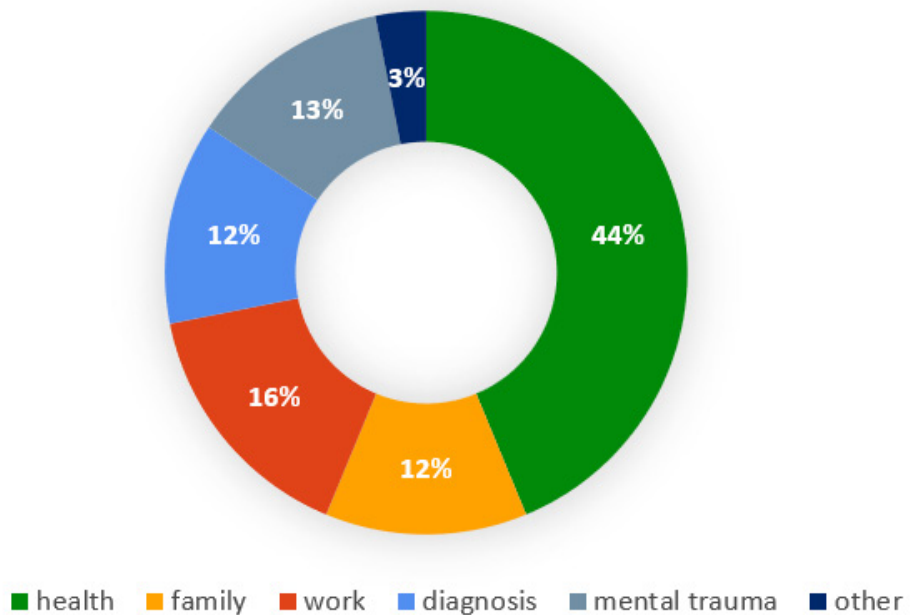


Figure 20. Reasons for career end.

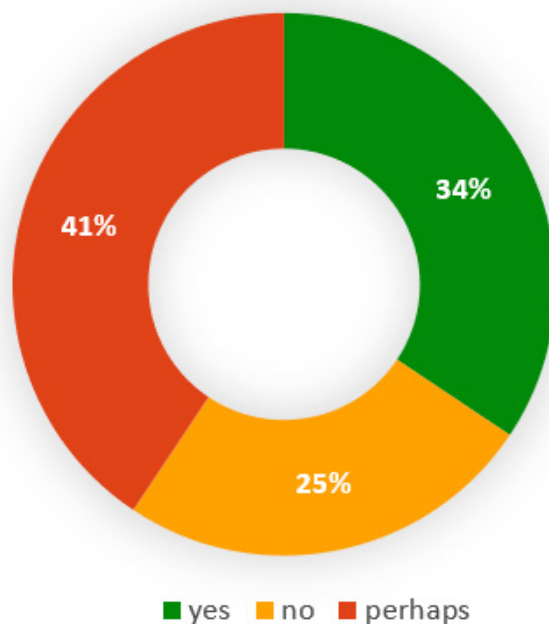


Figure 21. Life plans and football.

Life plans of 34% of the respondents are linked with football. Perhaps they decide to start working with children as coaches or become football activists in clubs. A quarter of the respondents clearly do not want to deal with this sport. Forty-one percent of players are still thinking about their future. Perhaps, someday they will return to the field for a purpose other than playing (Figure 21).

Sports injury ended the career of 28% football players. The remaining 72% of them started playing again after an injury.

DISCUSSION

The results are comparable to the ones provided in the literature about the subject [25-33]. Most individuals find an injury a traumatic situation that can easily get to one's brain. It often returns as a painful memory. Treatment efficacy and difficulties after returning to physician activity, during which a player sustained an injury, sometimes result from a large fear of re-injury.

The results confirmed assumptions about football injuries that affect mainly lower extremity, with joint sprains being the most common ones. In second league, the body is usually overloaded, which sometimes results in major injury.

The fate of a football player was not always kind. Individuals left on their own had to face unpleasant consequences. Women's football is still far behind men's one.

As far as psychological aspect of injuries is concerned, the study results show its consequences. Support from the loved ones is the most important factor while sustaining an injury and during a long rehabilitation. This is not just about family, also friends, teammates should be in constant contact with such a person so that he or she feel less lonely in a difficult time. The coach should play a significant role, being considered as the "father of success" at the football field. Survey results revealed that coaches pose a major issue. Not every coach "remembered" about the player injured to such extent that he or she could not play for a longer time. Worst of all, such player was kept away from the team, instead of being close. The role of the coach is to keep the player convinced that he or she is still an important team member. In team sports, the sense of belonging to a team is one of the biggest motivations for players. One of the most common mistakes made by a coach is excluding the injured player from the team's life. Forgetting about players makes them stop believing that they are valuable for the team. Such players start gradually keep distance from

the team and think negatively; after recovery someone else will take their place and they will no longer have a chance to be the best. That is why a coach should remember not to treat everyone the same, because each person is different. Injured players will gain confidence if they feel and see that the coach maintains contact not only with them but also with medical team. This will strengthen their self-esteem and motivate them to full rehabilitation.

Many factors influence the decision to continue or end the career. Treatment and rehabilitation do not always mean that a player will be able to return to the field. A long break results not only in reduced physical performance or poorer technique but also in losing confidence. Players' fate does not depend only on them, their motivation and goals. Sometimes an injury may eliminate the player from the game so that it is better to spare health and give up in a sense, letting football go. A severe and long-term injury is one of the biggest obstacles to motivation. Returning to the form before the injury is questionable. There are thoughts as to whether the entire treatment process will go according to plan and whether the injuries sustained during the injury will be completely cured. The key to success, namely returning to the field, is to keep thinking positively and focusing on what to do in a given moment to gradually recover, instead of worrying about what will happen if the injury is incurable and leads to the end of a career.

The results confirm that football players with emotional difficulties should be supported. A multidisciplinary approach should be developed to support injured players and the ones ending their career, e.g. establishing final examinations to help them retire. It is also important to increase knowledge and tolerance to mental issues among the players and the awareness that they are not left alone.

CONCLUSIONS

The most common injuries in second-league football setting were joint sprains, bone fractures and muscle problems. Lower extremities were usually more prone to sports injury, which affected nearly all football players from the field. Injuries to upper extremities were sustained only by goalkeepers. Injuries

were sustained primarily during the season at matches. Treatment of complete tear of ligaments and Achilles tendon lasted for the longest time. Recovery to regain full fitness from before the injury is a long and arduous rehabilitation process for everyone. Support from the loved ones is very important in this time. Female and male football players who participated in the study reacted differently from the psychological perspective to sports injury. For some it was a strong experience, while for other it was just another injury. The latter ones are professionals who pointed out that money (9%) was their main goal to return to the field.

Brutal play is the first cause listed by the respondents. Violated fair play rules resulted to some extent in health loss. Overloads associated with inappropriate training and choice of loads were causes of sports injuries that took place practically without contact with an opponent. Furthermore, poor condition of football pitch or weather contribute to injuries sustained by female and male football players to some extent.

In the study group, 28% of respondents decided to end their football career due to a sports injury. This decision was mostly taken due to fear of one's life, mental injury, reaction of loved ones and medical opinion. It was work, being the main source of financial income, that prompted football players to take such decision. Injury did not prevent 72% of the respondents from further football career. However as much as 61% of this group admitted to fear that their injury would re-occur. This meant that they do not play as good as they could have.

During treatment 77% of the injured were removed from the team by the coach. The study did not provide data whether this was their aware or unaware decision. However, this is one of the biggest coaching mistakes in relation to the athlete's mental status.

In summary, every injury sustained by an athlete affects their mental status to a lesser or greater extent. It depends on the personality and approach of the injured ones, how and when they will cope with it and come back to physical activity. The coach and coach's attitude should be one of the main factors playing role in player's return to sport.

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