

ORIGINAL ARTICLE



Do Prevention Programs Have an Impact on Injury Incidence in Football?

¹Alen Marosevic , ¹Ivan Belcic *, ¹Ivan Krakan 

¹Department of Sport, Faculty of Kinesiology, University of Zagreb, Zagreb, Croatia.

Submitted December 05, 2023; Accepted in final form February 13, 2024.

ABSTRACT

Background. Injuries in football are common, and they cause many problems for clubs and players. For this reason, it is necessary to try to restrict them to the lowest possible level. **Objectives.** The main objective of this study is to confirm whether clubs that regularly implement prevention programs will have a significantly lower incidence of injuries than clubs that do not implement them or do not implement them regularly. **Methods.** The sample of participants consisted of 340 football players who competed in the highest-ranking competition in Croatian football. Data collection was carried out in a prospective way, where the person in charge of a particular club entered data into the database every two weeks. **Results.** A comparison of the application of preventive programs concerning their nonapplication shows a statistically significant difference in the occurrence of injuries ($p < 0.009$), which means that a significant difference was observed between these programs. The presence of injuries in clubs that use preventive programs is 60.12% compared to 73.45% in clubs that do not use preventive programs. **Conclusion.** It has been confirmed that preventive programs reduce the frequency of injuries in the First Croatian Football League, precisely as the already proven reduction of injuries in other European leagues.

KEYWORDS: FIFA 11+, Football Injuries, Players' Knowledge, Injury Prevention.

INTRODUCTION

Daily high-intensity training, frequent trips, and playing in domestic and European leagues, with the imperative to achieve positive results, put football players at a high risk of injury. Football is not without risks, and injuries are an inherent part of the game. These injuries, ranging from minor sprains to severe concussions, can have profound and lasting effects on the well-being of players. The possibility of injury to players increases exponentially if it is considered that their occurrence mainly occurs at the moment of contact between players, which is an essential feature of this sport (1-4). Precisely because of a large number of matches and loads (often in a very short period), as well as the previously mentioned contacts and collisions, the risk of injury in football

is very high. The risk of injury for a professional football player is 1000 times higher than that of a worker doing a dangerous job in the industry (5-7). In addition to the vast cost that an injury brings to the club and the footballer, the player's injury also calls into question the continuation of the season but also increases the risk of repeated more severe injuries. Thus, a football player with a minor injury usually returns to full training load in less than 7 days (8). Injuries that are more serious and require an absence of more than 28 days should be treated with much more caution. One of the reasons is that in more than 50% of such injuries, a repeated injury occurs. This injury is identical and occurs at the same place. In such cases, apart from the high risk for the club that

*. Corresponding Author:
Ivan Belcic, Ph.D.
E-mail: ivan.belcic@kif.hr

loses a large amount of money, there is also the risk of jeopardizing the player's career (9). From this comes the conclusion that reducing the risk of injury to football players is essential, which is approached by ensuring quality conditions for implementing training processes. Ekstrand (10) and his colleagues proved in 1983 on amateur teams that football players who participated in prevention programs had 75% fewer injuries than the control group. Similar data were obtained by Junge et al. (9) on young amateurs who conducted research within the F-Marc group belonging to the FIFA organization. Previous research has generally shown that prevention programs positively reduce the number of injuries in football players, regardless of whether they are professionals or amateurs (11–16).

Quite well-known and widely accepted strategies for reducing the risk of injury are prevention programs implemented for many years at all levels of competition. One of the most researched injury prevention programs is the FIFA 11+ program. In many scientific studies, this program reduced the number of specific football injuries and, from a psychological perspective, better-prepared players for competitive conditions (11–13, 17, 18). Research on many participants who are predominantly amateurs showed that the mentioned program significantly reduces the number of injuries, particularly for teams at a higher competitive level (14–16).

In recent years, there has been a growing awareness of the need to prioritize player safety and reduce the incidence of football-related injuries. This awareness has led to a wave of research to understand the causes of these injuries and develop effective prevention strategies. As the sport evolves, so must our approach to mitigating

injury risks and ensuring players can enjoy the game they love without compromising their health.

In Croatia, there are practically no studies on injuries and the effectiveness of prevention programs in football. In today's practice, many sports injuries are observed, but there is no specific data on this, so it is a great need to determine the current situation to start with the injury prevention approach in Croatian football in the best possible way. According to this hypothesis of this study, which will be proved, clubs that regularly implement prevention programs will have a significantly lower incidence of injuries than clubs that do not implement them or do not implement them regularly.

MATERIALS AND METHODS

Ethics Committee approval. This study was approved by the Ethics Committee of the Faculty of Kinesiology, University of Zagreb, and was carried out following the Helsinki Declaration. All examinees signed a statement expressing their willingness to proceed with all the testing for this research.

Participants. For this research, the sample of participants consisted of 340 male football players (Table 1). Research participants competed in the First Croatian Football League, which is the highest ranking of competition in Croatian football. A player entering/leaving a cohort, e.g., through inbound/outbound club transfers, was included/excluded from the study cohort on the change date. Players who have an injury that they received before the start of the study or who subsequently joined the study by transfer/loan will not be excluded from the study, but their injury (if any at that time) is not recorded in the study.

Table 1. Basic descriptive parameters of the participants

	Height (cm)	Weight (kg)	Age (y)
Valid	340	340	340
Missing	0	0	0
\bar{x}	183.31	79.54	24.22
Sd	6.87	8.44	3.96
Min	159	55.00	18
Max	203	96.00	37

Procedure. Before conducting the research, a letter of intent was sent to the central football organization, the Croatian Football Association (CFF). The letter briefly explained the tasks and goals of this investigation, which was carried out

on the first Croatian Football League players. The next step of the research was arranging meetings with the clubs (directors/sports directors) where the research plan was presented, how and in what way the players and professional teams will

participate in the research, and what the obligations and duties of everyone. The protocol contained all-important research factors and their definitions, so the research was uniform for all clubs equally. After arranging all the details, players received their club's questionnaire form, which they needed to fill out, and club staff sent completed forms back to the authors. Data collection was carried out in a prospective way, where the person in charge of a particular club entered data into the database every two weeks. The type of injuries that were assessed in this research are categorized as brain concussion, fracture, other bone injuries, dislocation/subluxation, sprain/ligament injury, lesion of the meniscus/cartilage, muscle rupture/strain, laceration, tendon injury/rupture, tendinosis/bursitis, hematoma/bruising, cramps, abrasion, nerve injury, and dental injury.

Data Analysis. Data was analyzed using the SPSS 20 statistical package (SPSS Inc., Chicago, IL). Descriptive statistical data (mean, standard deviation, distribution appearance) are calculated for all anthropometric measurement parameters. The frequency and percentages of responses to questions about attitudes toward prevention programs are calculated from categorical data (crosstabulation). The exposure of players in matches/training and the incidence of player injury per 1000 hours of exposure in matches/training was also calculated. The frequency and percentages of responses to questions about attitudes toward prevention programs were derived from Crosstabulation tables. The chi-square test was used to determine differences, and the significance level was set to $p < 0.05$.

Questionnaire. The questionnaire distributed to the players examined the attitudes towards prevention programs. A modified questionnaire on attitudes towards lower extremity injuries was used to examine attitudes towards prevention programs (according to the study by O'Brien and Finch (19)). The questionnaire was divided into three parts: 1. general information about the respondents, 2. opinions about sports injuries, and 3. opinions about prevention programs. Respondents filled out this questionnaire only once at the very beginning of the research.

General information:

1. The name of the club you play for
2. Your body mass
3. Your body height
4. Your age
5. Dominant leg

6. Position in the team

Opinions about prevention programs:

1. Did you hear about prevention programs before filling out this questionnaire?
2. Is your team currently conducting prevention programs?
3. If your team conducts a prevention program, please name it.
4. Have you ever been on a team that used the FIFA 11+ program?
5. Does the prevention program have to be improved for your team?
6. Has your club developed its version of a prevention program?

RESULTS

The results of the participants according to the point of view on prevention programs show that when asked if they had heard about prevention programs before completing this survey, 49.7% of the participants said yes, 47.9% of the participants said no, while 2.4% of the participants said they were not sure (Table 2).

According to the matrix, the particle belongs to the reach dimension (R). Furthermore, when asked if their team currently uses a prevention program, 47.1% of the participants stated yes, 45.6% stated no, and 7.4% stated they were unsure. According to the matrix, the particle represents reach, adoption, and maintenance. When asked if your team uses a prevention program, please indicate which one can be seen as 7.7% of participants mention FIFA 11+, 2.8% of participants mention the PEP program, 3.7% of participants mention Knaekontroll, and 85.8% of participants state another. According to the matrix, this particle belongs to reach and adoption (Table 3).

When asked if they had ever been on a team that used the FIFA11+ program, 19.5% of participants said yes, 32.7% said no, and 47.8% said they were unsure. According to the particle-matrix, it falls under reach and adoption. Furthermore, when asked whether the prevention program should be improved for use in your team, 38.1% of the participants said yes, 30.4% stated no, and 31.6% stated they were unsure. The question refers to adoption, implementation, and maintenance. When asked if your club has developed its version of a prevention program, 47.4% of the participants said yes, 27.1% said no, and 25.6% said they were unsure. The particle indicates the reach and implementation (Table 4).

Table 2. Information on prevention programs with RE-AIM dimensions

		N	%	RE-AIM dimensions
Did you hear about prevention programs before filling out this questionnaire?	Yes	169	49.7%	R
	No	163	47.9%	
	Not sure	8	2.4%	
	Total	340	100.0%	
Is your team currently conducting prevention programs?	Yes	160	47.1%	R, A, M
	No	155	45.6%	
	Not sure	25	7.4%	
	Total	340	100.0%	

R: reach, E: effectiveness, A: adoption, I: implementation, M: maintenance.

Table 3. Information on prevention programs with RE-AIM dimensions

		N	%	RE-AIM dimensions
If your team is conducting a prevention program, please name it	FIFA 11+	25	7.7%	R, A
	PEP program	9	2.8%	
	Knaekontroll	12	3.7%	
	Others	278	85.8%	
	Total	324	100.0%	

R: reach, E: effectiveness, A: adoption, I: implementation, M: maintenance.

A Chi-square test shows a statistically significant difference in the occurrence of injuries

with the application of preventive programs compared to their nonapplication (Table 5).

Table 4. Information on prevention programs with RE-AIM dimensions

		N	%	RE-AIM dimensions
Have you ever been on a team that used the FIFA 11+ program?	Yes	66	19.5%	R, A
	No	111	32.7%	
	Not sure	162	47.8%	
	Total	339	100.0%	
Does the prevention program have to be improved for your team?	Yes	129	38.1%	A, I, M
	No	103	30.4%	
	Not sure	87	25.6%	
	Total	339	100.0%	
Has your club developed its version of a prevention program?	Yes	161	47.4%	R, I
	No	92	27.1%	
	Not sure	87	25.6%	
	Total	340	100%	

R: reach, E: effectiveness, A: adoption, I: implementation, M: maintenance.

Table 5. Comparison of using / not using prevention programs regarding injuries

	Injuries		Without injuries		Total		p*
	N	%	N	%	N	%	
Clubs that use prevention programs	98	60.12%	65	39.88%	163	100.00%	p=0.009
Clubs that do not use prevention programs	130	73.45%	47	26.55%	177	100.00%	

*: Chi-square test significance.

DISCUSSION

A comparison of the application of preventive programs regarding their nonapplication shows a statistically significant difference in the occurrence of injuries. It can be seen that $p < 0.05$ means that a

significant difference was observed between these programs. The presence of injuries in clubs that use preventive programs is 60.12% compared to 73.45% in clubs that do not use preventive programs. It has been established that preventive

programs reduce the frequency of injuries in Europe and the First Croatian Football League. Numerous authors obtained the same positive research results that investigated the impact of preventive programs on reducing the incidence of injuries (12, 14, 15, 20). The authors also concluded that long-term program use could reduce injury rates by 20% to 50%. O'Brien and Finch (19) also investigated how best to implement scientifically proven prevention programs. One of the problems is "agents", that is, people who implement programs with end users - athletes. If the agent is not a researcher but a trainer or a therapist, his education is required to implement the program in the prescribed manner. In the entire implementation process of the prevention program and its implementation, the most essential component is the "agent" mentioned by O'Brien and Finch (19).

The scientific research cited in this paper was conducted under laboratory conditions and a small sample, so positive results could be expected. This research was conducted on a considerable sample of participants whose personal influences played a significant role, and the result was ultimately positive. It should also be noted that the research by Soderman et al. (21) researched female football players with an average age of 20.5 years and a semi-professional level of competition for 6 months, 5 times a week. Compared to other studies, this did not offer statistically significant conclusions. No significant differences were found between the groups considering the number, incidence, or type of traumatic injuries of the lower extremities. However, there is great room for improvement in implementing preventive programs in teams that use it, that is, in implementing the same in teams that do not use it. The systematic implementation of these will lead to a reduction in the number of injuries, a reduction in material and technical costs, and ultimately to prolong the player's career. Previous research has proven that prevention programs give positive results at the professional level. It was also proven in this research that teams that use prevention programs have a significantly lower number of injuries than teams that do not use them. In a practical sense, preventive programs should be introduced at all levels of competition in the First Croatian Football League, either in a unified form like FIFA11+ or in a modified form so that it is suitable for each team separately. Raising the awareness of First Croatian Football League

players towards preventive programs regarding career extension is also one of the essential practical conclusions. The attitudes of football players in the First Croatian Football League have been shown to differ from those of professional players in other leagues, which also indicates that education in this area should be increased.

When the participants were asked if they were in a team that used the FIFA11+ program (the particle belongs to reach and adoption), the results obtained were better than the results of other researchers (19, 22), where the players confirmed with 11% that they were in a team that uses FIFA11+, they are not sure with 51%, which is also a weaker result than the First Croatian football league, and 38% of participants are not sure. In contrast, in the First Croatian Football League, that percentage is slightly higher and amounts to 47.8%. This data shows that the First Croatian Football League players recognized and used the prevention program in their club, while most players are also unsure. Another reason why a tiny percentage of players have heard of the FIFA11+ program may be that the program was primarily developed for amateur and recreational teams, while the sample of participants in this research is a professional football player. The program was introduced in 2006, and there is a high possibility that the players did not participate in amateur clubs at that time. Another reason for the program's low representation may be the program's slow integration across all levels of the football organization in Croatia (national association, regional associations...). Research that supports the low representation and knowledge of the FIFA11+ program is reported by Owoye et al. (17) on the younger football players of the Nigerian First League, where only 21% of the players knew about the program.

One of the more essential factors that strengthen this research is the level of competition at which the research was conducted. It should also be noted that almost 100% of the competitive level itself is included in the study results.

Addressing football injuries is paramount for players' well-being and the sport's sustainability. Future research should remain dedicated to advancing our understanding of these injuries and developing effective prevention strategies. Focusing on concussion prevention and management, lower extremity injury reduction,

heat-related injury prevention, overuse injury management, and muscle and soft tissue injury prevention can create a safer environment for football players at all game levels. Collaboration between researchers, medical professionals, coaches, and players is essential in implementing evidence-based preventive measures. In addition, the integration of technology, such as advanced helmets and wearable devices, can significantly aid in injury prevention and player safety. Ultimately, as research continues to shed light on the causes and prevention of football-related injuries, the sport can evolve to minimize risk while preserving the excitement and camaraderie that make football a beloved global pastime. This collective effort to reduce injuries benefits current players, teams, and club management and ensures a healthier future for football and its athletes. Also, it will show the path for strength and conditioning coaches to implement injury prevention programs for their plans for the season.

CONCLUSION

This research shows that implementing prevention programs significantly lowers the number of injuries. Players have a generally favorable opinion towards prevention programs and are motivated to conduct this during their training, but many players are unsure or do not know about prevention programs conducted in their clubs. The representation of prevention programs in the First Croatian Football League was lower than that of the elite clubs that compete in the Champions League. Comprehensive education of all stakeholders in this system is needed, starting from the top in the football organization, and will lead the process through all phases. As proven through previous research, implementing prevention programs reduces the number and severity of injuries to which professional football players are susceptible.

APPLICABLE REMARKS

- The findings can be used to understand injury prevention better and reduce the number of injuries.
- Based on the players' attitudes towards injuries and the use of prevention programs, the study can further develop the existing prevention programs used or propose the creation of their programs based on the results.
- Another practical implication of the results with applicable remarks is additional education of all medical and sports staff, which is needed for all

football game participants to implement prevention programs that are more accessible, more precise, and more productive.

ACKNOWLEDGMENTS

The authors thank the Croatian Football Federation, clubs, and professional staff for cooperating in this research.

AUTHORS' CONTRIBUTIONS

Study concept and design: Alen Marosevic, Ivan Belcic. Acquisition of data: Alen Marosevic. Analysis and interpretation of data: Ivan Krakana. Drafting the manuscript: Alen Marosevic, Ivan Belcic, Ivan Krakana. Critical revision of the manuscript for important intellectual content: Ivan Belcic. Statistical analysis: Ivan Krakana. Administrative, technical, and material support: Ivan Krakana. Study supervision: Alen Marosevic, Ivan Belcic.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

FINANCIAL DISCLOSURE

The authors have no financial interests related to the material in the manuscript.

FUNDING/SUPPORT

This study was fully supported by the Faculty of Kinesiology, University of Zagreb – authors' affiliation.

ETHICAL CONSIDERATION

This study was approved by the Ethics Committee of the Faculty of Kinesiology, University of Zagreb, and was carried out following the Helsinki Declaration. Examinees have signed statements expressing their willingness to proceed with the research.

ROLE OF THE SPONSOR

The funding organizations are public institutions and have no role in the design and conduct of the study, collection, management, and analysis of the data or preparation, review, and approval of the manuscript.

ARTIFICIAL INTELLIGENCE (AI) USE

There was NO use of artificial intelligence (AI) for preparation, writing, or editing this manuscript.

REFERENCES

1. Kucera, KL, Marshall, SW, Kirkendall, DT, Marchak, PM, Garrett, WE Injury History as a Risk Factor for Incident Injury in Youth Soccer. *British Journal of Sports Medicine*. 2005;39:462–462. [doi:10.1136/bjism.2004.013672] [PMid:15976172]
2. Peterson, L, Junge, A, Chomiak, J, Graf-Baumann, T, Dvorak, J Incidence of Football Injuries and Complaints in Different Age Groups and Skill-Level Groups. *Am J Sports Med*. 2000;28:S51-57. [doi:10.1177/28.suppl_5.s-51] [PMid:11032108]
3. Andersen, TE, Engebretsen, L, Bahr, R. Rule Violations as a Cause of Injuries in Male Norwegian Professional Football: Are the Referees Doing Their Job? *Am J Sports Med*. 2004;32:62S-8S. [doi:10.1177/0363546503261412] [PMid:14754861]
4. Andersen, T, Larsen, O, Tenga, A, Engebretsen, L, Bahr, R. Football Incident Analysis: A New Video-Based Method to Describe Injury Mechanisms in Professional Football. *Br J Sports Med*. 2003;37:226–232. [doi:10.1136/bjism.37.3.226] [PMid:12782547]
5. Drawer, S, Fuller, C. Evaluating the Level of Injury in English Professional Football Using a Risk Based Assessment Process. *Br J Sports Med*. 2002;36:446–451. [doi:10.1136/bjism.36.6.446] [PMid:12453840]
6. Hawkins, RD, Fuller, CW. An Examination of the Frequency and Severity of Injuries and Incidents at Three Levels of Professional Football. *Br J Sports Med*. 1998;32:326–332. [doi:10.1136/bjism.32.4.326] [PMid:9865406]
7. Hawkins, RD, Fuller, CW. A prospective epidemiological study of Injuries in Four English professional football clubs. *Br J Sports Med*. 1999;33:196–203. [doi:10.1136/bjism.33.3.196] [PMid:10378073]
8. Lüthje, P, Nurmi, I, Kataja, M, Belt, E, Helenius, P, Kaukonen, JP, Kiviluoto, H, Kokko, E, Lehtipuu, TP, Lehtonen, A et al. Epidemiology and Traumatology of Injuries in Elite Soccer: A prospective study in Finland. *Scand J Med Sci Sports*. 1996;6:180–185. [doi:10.1111/j.1600-0838.1996.tb00087.x] [PMid:8827848]
9. Junge, A, Chomiak, J, Dvorak, J. Incidence of Football Injuries in Youth Players. Comparison of players from Two European Regions. *Am J Sports Med*. 2000;28:S47-50. [doi:10.1177/28.suppl_5.s-47] [PMid:11032107]
10. Ekstrand, J, Gillquist, J, Möller, M, Oberg, B, Liljedahl, SO. Incidence of Soccer Injuries and Their Relation to Training and Team Success. *Am J Sports Med*. 1983;11:63–67. [doi:10.1177/036354658301100203] [PMid:6846683]
11. Bizzini, M, Impellizzeri, FM, Dvorak, J, Bortolan, L, Schena, F, Modena, R, Junge, A. Physiological and Performance Responses to the “FIFA 11+” (Part 1): Is It an Appropriate Warm-Up? *J Sports Sci*. 2013;31:1481–1490. [doi:10.1080/02640414.2013.802922] [PMid:23855725]
12. Grooms, DR, Palmer, T, Onate, JA, Myer, GD, Grindstaff, T. Soccer-Specific Warm-Up and Lower Extremity Injury Rates in Collegiate Male Soccer Players. *J Athl Train*. 2013;48:782–789. [doi:10.4085/1062-6050-48.4.08] [PMid:23848519]
13. Impellizzeri, FM, Bizzini, M, Dvorak, J, Pellegrini, B, Schena, F, Junge, A. Physiological and Performance Responses to the FIFA 11+ (Part 2): A Randomised Controlled Trial on the Training Effects. *J Sports Sci*. 2013;31:1491–1502. [doi:10.1080/02640414.2013.802926] [PMid:23855764]
14. Steffen, K, Emery, CA, Romiti, M, Kang, J, Bizzini, M, Dvorak, J, Finch, CF, Meeuwisse, WH. High Adherence to a Neuromuscular Injury Prevention Program (FIFA 11+) Improves Functional Balance and Reduces Injury Risk in Canadian Youth Female Football Players: A Cluster Randomised Trial. *Br J Sports Med*. 2013;47:794–802. [doi:10.1136/bjsports-2012-091886] [PMid:23559666]
15. Soligard, T, Myklebust, G, Steffen, K, Holme, I, Silvers, H, Bizzini, M, Junge, A, Dvorak, J, Bahr, R, Andersen, TE. Comprehensive Warm-up Program to Prevent Injuries in Young Female Footballers: Cluster Randomised Controlled Trial. *BMJ*. 2008;337:a2469. [doi:10.1136/bmj.a2469] [PMid:19066253]
16. Häggglund, M, Waldén, M, Magnusson, H, Kristenson, K, Bengtsson, H, Ekstrand, J. Injuries Affect Team Performance Negatively in Professional Football: An 11-Year Follow-up of the UEFA Champions League Injury Study. *Br J Sports Med*. 2013;47:738–742. [doi:10.1136/bjsports-2013-092215] [PMid:23645832]

17. Owoye, OBA, Akinbo, SRA, Tella, BA, Olawale, OA. Efficacy of the FIFA 11+ Warm-Up Program in Male Youth Football: A Cluster Randomised Controlled Trial. *J Sports Sci Med*. 2014;13:321–328.
18. Clausen, MB, Zebis, MK, Møller, M, Krstrup, P, Hölmich, P, Wedderkopp, N, Andersen, LL, Christensen, KB, Thorborg, K. High Injury Incidence in Adolescent Female Soccer. *Am J Sports Med*. 2014;42:2487–2494. [doi:10.1177/0363546514541224] [PMid:24989492]
19. O'Brien, J, Finch, CF. Injury Prevention Exercise Programs for Professional Soccer: Understanding the Perceptions of the End-Users. *Clin J Sport Med*. 2017;27:1–9. [doi:10.1097/JSM.0000000000000291] [PMid:26829608]
20. Soligard, T, Nilstad, A, Steffen, K, Myklebust, G, Holme, I, Dvorak, J, Bahr, R, Andersen, TE. Compliance with a Comprehensive Warm-up Program to Prevent Injuries in Youth Football. *Br J Sports Med*. 2010;44:787–793. [doi:10.1136/bjsm.2009.070672] [PMid:20551159]
21. Söderman, K, Werner, S, Pietilä, T, Engström, B, Alfredson, H. Balance Board Training: Prevention of Traumatic Injuries of the Lower Extremities in Female Soccer Players? A Prospective Randomized Intervention Study. *Knee Surg Sports Traumatol Arthrosc*. 2000;8:356–363. [doi:10.1007/s001670000147] [PMid:11147154]
22. O'Brien, J, Young, W, Finch, CF. The Delivery of Injury Prevention Exercise Programs in Professional Youth Soccer: Comparison to the FIFA 11. *J Sci Med Sport*. 2017;20:26–31. [doi:10.1016/j.jsams.2016.05.007] [PMid:27293086]