

Study on the efficiency of advanced pressing in the Premier League

Authors' Contribution: Sorin Brîndescu ^{ACDG}, Francisc-Remus Datcu ^{CDFG}, Ionuț-Alexadru Buda ^{BEFG}

A Study Design
B Data Collection
C Statistical Analysis
D Data Interpretation
E Manuscript Preparation
F Literature Search
G Funds Collection

Faculty of Physical Education and Sport, West University of Timisoara,
Timisoara, Romania

abstract

Background: Advanced pressing is a tactical relationship which consists of a joint effort which players undertake to win back possession as high up the pitch as possible. It comes as a direct counter to slow build-up styles like the tiki-taka and has existed, historically, for decades. The best examples from history can be Ajax and Feyenoord in the 1970s, as well as the Dutch national team from the same period. In these days, some of English teams use this tactical relationship with the desire to recover the ball as quickly as possible.

Material and methods: In order to analyze the efficiency of advanced pressing in modern football, we have used statistical analysis which we took from the site fbref.com [accessed on 20 April, 2021], key raw pressing statistics like % of successful pressing attempts, as well as viewing football games to see which teams use a high, medium or low defensive block. We have analyzed how far up the pitch they usually defend and press, how successful they are with their pressing and what their dependencies are.

Results: On average, although there is a dependency on the quality of the players available in the squad, teams which adopted an advanced pressing tactic had better results than teams which did not. They won the ball higher up the field and initiated goal actions much closer to the opposition's goal.

Conclusions: In modern football, teams which use advanced pressing have better results than teams who prefer to sit deep and let the opposition build from the back. Advanced pressing produces good results for other attacking statistics as well: entries in the final third, expected goals and overall league position, but it is not the only success factor. Teams still need to be capable of holding their defensive shape in order to avoid having large gaps between their defenders and their attackers.

Key words: advanced pressing, tactics, football.

article details

Article statistics: **Word count:** 2,470; **Tables:** 4; **Figures:** 1; **References:** 28

Received: June 2021; **Accepted:** October 2021; **Published:** November 2021

Full-text PDF: <http://www.balticsportscience.com>

Copyright © Gdansk University of Physical Education and Sport, Poland

Indexation: Celdes, Clarivate Analytics Emerging Sources Citation Index (ESCI), CNKI Scholar (China National Knowledge Infrastructure), CNPIEC, DOAJ, EBSCO - Central & Eastern European Academic Source, EBSCO - SPORTDiscus, EBSCO Discovery Service, Google Scholar, Index Copernicus, J-Gate, Naviga (Softweco, Primo Central (ExLibris), ProQuest - Family Health, ProQuest - Health & Medical Complete, ProQuest - Illustrata: Health Sciences, ProQuest - Nursing & Allied Health Source, Summon (Serials Solutions/ProQuest, TDOne (TDNet), Ulrich's Periodicals Directory/ulrichsweb, WorldCat (OCLC)

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Conflict of interests: Authors have declared that no competing interest exists.

Corresponding author: Sorin Brîndescu; Faculty of Physical Education and Sport, West University of Timisoara; email: sorin.brindescu@e-uvt.ro

Open Access License: This is an open access article distributed under the terms of the Creative Commons Attribution-Non-Commercial-No-Derivatives 4.0 International (<https://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits use, distribution, and reproduction in any medium, provided the original work is properly cited, the use is non-commercial and is otherwise in compliance with the license.

INTRODUCTION

Intensive progress in technologies for position tracking has enabled acquisition of high quality data describing the movements of players in sport games, in particular, football (a.k.a. soccer) [1-4].

A pressing behavior of a defending team at each moment can be seen as a combination of multiple instances of pressure relationships [5, 6]. In general, pressing refers to the process in which the defending team aims to pressure the opponent who possesses the ball in order to give him less time to pass and create. The end result should be either forcing the opponent to perform high-complexity technical procedures like long passes, or to force him to lose possession or pass backwards [7].

Advanced pressing is a sub-genre of pressing which aims to perform all the steps above in the final third of the pitch, or as advanced as possible [8]. There are a few reasons for doing this:

- Typically, the opposition's goalkeeper and defenders are the least technical players on the field and most prone to errors [9].
- Winning the ball back in the final third of the pitch allows easy creation of clear cut chances [10].
- Pressing the enemy team up the field renders their main attacking threats (like their attackers, wingers or advanced playmakers) useless since they cannot get the ball [11].

Football history shows us that the concept of advanced pressing is not new. The Dutch national team used it with great success in the 1970s, learning from the experience of their greatest clubs, Ajax and Feyenoord [12-15]. Towards the end of that decade, teams slowly moved from a narrow, deep defense in their own third to a more proactive, higher-up-the-pitch pressing. Arrigo Sacchi was one of the pioneers of this system in AC Milan [16].

In modern football, more and more teams are using advanced pressing styles in their tactics - even regardless of what they do with the ball as soon as they recover it [17]. These tactics range from teams which aim to retain possession after winning the ball back (for example, Guardiola's Manchester City or, more generally, Barcelona and other teams who favor possession over attacking moves) to teams which target playing direct football after winning the ball back [18]. Liverpool's Champions League winning run from 2019 is a prime example of using the "gegenpress" style - high intensity pressing and running up the field and aiming to create goal chances immediately after winning the ball back [19, 20].

Pressing requires extremely high fitness levels in order to be executed [21]. Players have to be able to close down options for the opposition by applying pressure to the player in possession. It is often hard to execute this style of play for the full 90 minutes without having trained extensively [22].

MATERIAL AND METHODS

There are some concepts which define advanced pressing:

- Line of engagement. The line of engagement is the imaginary horizontal line behind which the defending team retreats for defending. When an attacker crosses this line with the ball, they are quickly pressed. An extremely high line of engagement is at the level of the opposition keeper, an aggressive one around the central defender line, while a deep one is within the defending team's own half.
- Pressing intensity. This represents the intensity used by the defending players where pressing. This can range from very high (quick adaptations, quick movements, aiming to win the ball even with the price of fouls) to low (slow, mostly to cover angles and put some pressure).

- **Defensive depth.** This is a horizontal imaginary line where the deepest outfield players of the defending team sit. A high defensive line means the central defenders are sitting close / at the same level with defensive midfielders, while a deep defensive line has them sitting close to their goalkeeper.

These three concepts merge together in forming 3 types of defensive blocks:

1. A high defensive block is a combination of a high line an engagement and a high defensive line.
2. A medium defensive block is a combination of a medium line of engagement and a medium defensive line.
3. A low defensive block is a combination of a low line of engagement and a deep defensive line.

As observed in most tactical journals, combining a deep defensive line with a high line of engagement makes little sense, since it mostly leaves midfielders very exposed and with a lot of ground to cover [23]. Similarly, a high defensive line with a low line of engagement is very vulnerable to through balls or long passes over the defense.

Advanced pressing is mostly performed by teams using a high defensive block [24]. This defensive block can easily be spotted in teams - it consists of central defenders sitting close to the center of the field, wingers pressing opposition fullbacks and the attacker usually pressing the opposition goalkeeper [25]. Advanced pressing styles usually have two different lines of engagement: either at the level of the opposition goalkeeper (extremely aggressive) or at center-back or fullback level (aggressive).

Also, it is worth mentioning that the degree of success or failure of advance pressing is closely tied with the qualities of the players performing the exercise [26]. From a physical standpoint, players have to have high levels of acceleration and stamina to keep up advanced pressing for an entire game, while they also have to have high values of work rate, tackling and anticipation. Furthermore, the efficiency of advanced pressing also comes from what a team actually accomplishes after winning the ball back - where creativity, decision-making and finishing all come into place.

For the purpose of this article, we have analyzed teams in the English Premier League. We took the data from the site fbref.com [accessed on 20 April, 2021]. We used the viewing method to see the matches in which the English teams are involved. We have analyzed how far up the pitch they usually defend and press, how successful they are with their pressing and what their dependencies are. In recent years, technological advances have allowed the implementation of sophisticated match analysis systems during official sports competitions [27].

The most relevant statistical data is presented in the following table:

Table 1. Pressures in attacking third

Squad	# Pl	90s	Pressures					
			Press	Succ	%	Def 3rd	Mid 3rd	Att 3rd
Arsenal	29	34	4186	1201	28.7	1325	1710	1151
Aston Villa	22	33	4662	1263	27.1	1591	1967	1104
Brighton	27	34	4565	1467	32.1	1518	1935	1112
Burnley	24	34	4153	1125	27.1	1208	1859	1086
Chelsea	27	34	4845	1523	31.4	1546	2138	1161
Crystal Palace	22	33	4797	1268	26.4	1975	1986	836

Squad	# Pl	90s	Pressures					
			Press	Succ	%	Def 3rd	Mid 3rd	Att 3rd
Everton	29	33	4695	1365	29.1	1888	1900	907
Fulham	27	34	4463	1327	29.7	1528	1869	1066
Leeds United	22	34	5943	1772	29.8	2078	2574	1291
Leicester City	27	34	4497	1416	31.5	1597	1929	971
Liverpool	28	33	4488	1454	32.4	1097	1936	1455
Manchester City	23	34	3976	1260	31.7	980	1781	1215
Manchester Utd	25	33	4264	1256	29.5	1276	1859	1129
Newcastle Utd	27	34	4873	1243	25.5	1874	2030	969
Sheffield Utd	25	34	5495	1372	25.0	1876	2340	1279
Southampton	29	33	4823	1512	31.3	1674	2099	1050
Tottenham	24	34	5166	1425	27.6	1882	2267	1017
West Brom	30	34	4977	1378	27.7	1931	2088	958
West Ham	24	34	4336	1173	27.1	1681	1846	809
Wolves	26	34	4480	1357	30.3	1862	1877	741

Pl – number of players used in games; 90s – minutes played divided by 90; Press – number of times applying pressure to opposing player who is receiving, carrying or releasing the ball; Succ – number of times the squad gained possession within five seconds of applying pressure; % – percentage of time the squad gained possession within five seconds of applying pressure; Def 3rd – number of times applying pressure to opposing player who is receiving, carrying or releasing the ball, in the defensive 1/3; Mid 3rd – number of times applying pressure to opposing player who is receiving, carrying or releasing the ball, in the middle 1/3; Att 3rd – number of times applying pressure to opposing player who is receiving, carrying or releasing the ball, in the attacking 1/3.

RESULTS

We can see that usually the teams which press higher up the pitch have better results, although the correlation is not true for all cases. The most successful teams in terms of advanced pressing are:

- Liverpool – 1455 pressing attempts in the final third, with an overall success ratio of 32.4%
- Leeds United – 1291 attempts, overall success ratio of 29.8%
- Sheffield United – 1279 attempts, success rate of 25%

Manchester City, Chelsea, Arsenal, Manchester United and Brighton follow in this regard, all with over 1100 pressing attempts in the final third, after 34 match days in the English Premier League.

We have also analyzed the following table in correlation with the statistics above:

Table 2. Touches in attacking third

Squad	# Pl	Poss	90s	Touches						
				Touches	Def Pen	Def 3rd	Mid 3rd	Att 3rd	Att Pen	Live
Arsenal	29	53.6	34	22555	2312	7495	10629	5932	881	21142
Aston Villa	22	48.7	33	18357	2286	6063	7830	5495	935	16750
Brighton	27	51.5	34	20949	2336	7402	9110	5824	925	19436
Burnley	24	41.4	34	17102	2065	5410	8092	4459	637	15592
Chelsea	27	61.3	34	26504	2450	8368	13002	6831	965	25076
Crystal Palace	22	40.3	33	17307	2019	6214	8037	4101	580	15769
Everton	29	47.3	33	20023	2556	7708	9222	4351	612	18640
Fulham	27	49.0	34	20941	2323	7241	9831	5200	717	19406
Leeds United	22	57.9	34	22196	2742	8501	9579	5526	876	20582
Leicester City	27	55.0	34	22549	2210	7467	10870	5555	761	21072

Squad	# Pl	Poss	90s	Touches						
				Touches	Def Pen	Def 3rd	Mid 3rd	Att 3rd	Att Pen	Live
Liverpool	28	62.6	33	26172	1881	6830	13251	7691	1155	24657
Manchester City	23	64.5	34	27464	1873	6296	14816	8245	1243	26094
Manchester Utd	25	56.3	33	23086	2016	6872	10751	7062	925	21624
Newcastle Utd	27	38.7	34	16741	2347	6687	6870	4123	561	15164
Sheffield Utd	25	41.0	34	17939	2148	5884	7719	5329	629	16475
Southampton	29	51.9	33	20221	2110	6913	9973	4551	681	18668
Tottenham	24	51.3	34	21684	2400	7400	10914	4657	660	20154
West Brom	30	37.7	34	16489	2410	6142	7135	3979	571	14938
West Ham	24	41.9	34	18145	2189	6200	8323	4727	726	16662
Wolves	26	48.8	34	20360	2081	6756	10060	4867	654	18823

Pl – number of players used in games; Poss – possession; 90s – minutes played divided by 90; Touches – number of times a player touched the ball; Def Pen – touches in defensive penalty area; Def 3rd – touches in defensive 1/3; Mid 3rd – touches in middle 1/3; Att 3rd – touches in attacking 1/3; Att Pen – touches in penalty area; Live – live-ball touches. Does not include corner kicks, free kicks, throw-ins, kick-offs, goal kicks or penalty kicks.

We can see the same teams (Liverpool, Leeds United, Manchester City, Arsenal, Manchester United and Brighton) leading in terms of touches in the attacking 3rd, with Sheffield United trailing just behind Aston Villa. The same teams lead in terms of touches in the penalty area, as well as expected goals (xG)

Table 3. Spot in expected goals table

Squad	Expected					G-xG	np:G-xG
	PK	PKatt	xG	np:G	np:G/Sh		
Manchester City	5	8	66.2	60.2	0.12	3.8	4.8
Liverpool	6	6	60.8	56.3	0.11	-8.8	-10.3
Chelsea	7	9	55.9	49.1	0.10	-4.9	-5.1
Manchester Utd	8	9	53.2	46.4	0.10	7.8	6.6
Leicester City	8	10	50.3	42.7	0.10	6.7	6.3
Arsenal	6	6	49.3	44.8	0.11	-5.3	-6.8
Leeds United	3	3	49.3	47.0	0.10	-1.3	-2.0
Brighton	6	9	48.5	41.6	0.10	-14.5	-13.6
Tottenham	5	5	47.5	43.7	0.11	11.5	10.3
Aston Villa	4	5	47.4	43.6	0.10	-1.4	-1.6
West Ham	2	3	46.4	44.0	0.11	6.6	7.0
Everton	4	4	41.0	38.1	0.12	2.0	0.9
Fulham	3	6	36.8	33.1	0.09	-12.8	-12.1
Wolves	4	4	36.1	33.1	0.08	-5.1	-6.1
Southampton	5	6	35.3	30.8	0.09	5.7	5.2
Burnley	3	3	34.8	32.5	0.10	-4.8	-5.5
Newcastle Utd	4	4	33.6	30.5	0.09	0.4	-0.5
West Brom	4	4	28.8	25.8	0.09	0.2	-0.8
Sheffield Utd	3	4	27.7	24.7	0.09	-10.7	-10.7
Crystal Palace	3	3	25.6	23.4	0.09	6.4	5.6

PK – penalty kicks made; PKatt – penalty kicks attempted; xG – expected goals; np:G – non-penalty expected goals; np:G/Sh – non-penalty expected goals per shot; G-xG – goal minus expected goals; np:G-xG – non penalty goals minus non-penalty expected goals.

DISCUSSION

From the above statistics we can see that:

1. There are a fair number of teams who press high up the pitch in the Premier League, and not all of them are considered top teams.
2. From the traditional big 6 teams (Manchester United, Manchester City, Chelsea, Arsenal, Liverpool and Tottenham), Tottenham defends deep, while Manchester United and Arsenal press higher up the pitch, but do not use a high line of engagement.
3. There are other teams which use advanced pressing and are not big clubs, like Leeds United (newly promoted to the Premier League, but famous for their high intensity running and pressing under Marcelo Bielsa), Sheffield United and Brighton.
4. We can see a clear correlation between the success of a team and advanced pressing, depending on the analyzed figures. Depending on the success percentage of their advanced pressing actions, teams enter the final third with the ball a lot more than other teams which do not use advanced pressing. This usually leads to more chances being created and more expected goals. Expected goals are the best way to see if a team creates enough chances from open play. Of course, the system does not guarantee success enough, but it is a good indicator of it. In the graph below (Fig. 1), we have highlighted the teams which use advanced pressing the most in the Premier League and compared their overall league position, xG as well as entries in the last third of the pitch.

Table 4. Premier League position at the end of day 34

Team	Spot in xG table	Progressions in attacking third	High pressing Table	Premier League position at the end of day 34
Arsenal	6	7	6	9
Aston Villa	10	4	9	10
Brighton	8	6	8	14
Burnley	16	15	10	16
Chelsea	3	3	5	4
Crystal Palace	20	18	18	13
Everton	12	17	17	8
Fulham	13	11	11	18
Leeds United	7	8	2	11
Leicester City	5	9	14	3
Liverpool	2	2	1	7
Manchester City	1	1	4	1
Manchester Utd	4	5	7	2
Newcastle Utd	17	20	15	17
Sheffield Utd	19	16	3	20
Southampton	15	12	12	15
Tottenham	9	13	13	6
West Brom	18	19	16	19
West Ham	11	10	19	5
Wolves	14	14	20	12

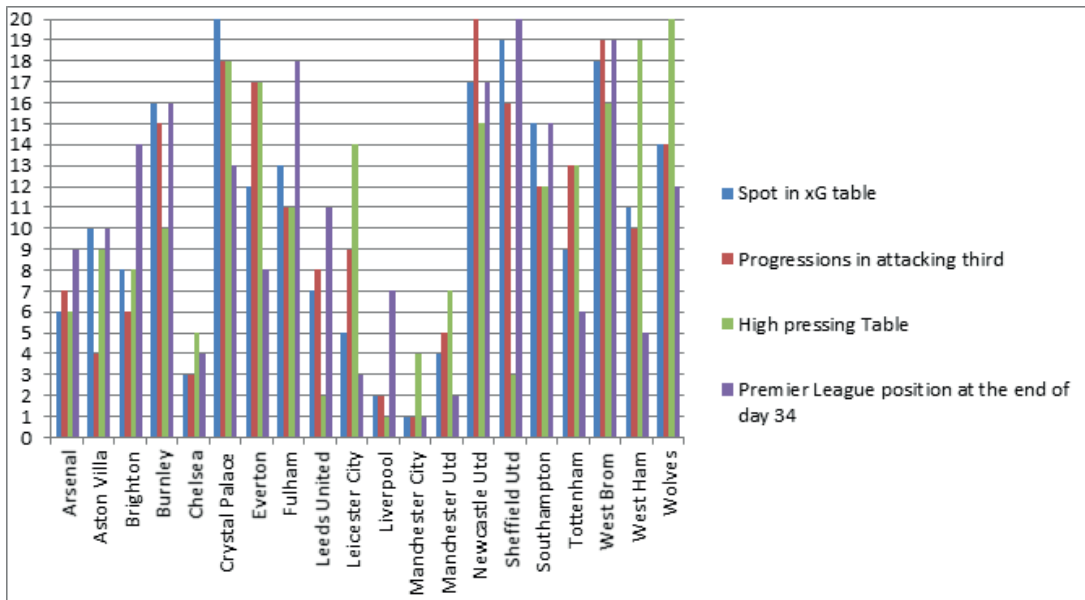


Fig. 1. Comparison between league position, spot in expected goals table, progressions in attacking third and high pressing table

In their work, Bojinov and Bornn, used maps to show the strengths and weaknesses of a team, both in attack and defense. This allows coaches not only to adjust defensive strategy to bolster weak regions, but also to build offensive strategies to exploit an opponent’s spatial vulnerabilities [28].

CONCLUSIONS

Overall, teams which use advanced pressing are more successful than teams which do not use it and defend deep. Advanced pressing produces good results for other attacking statistics as well: entries in the final third, expected goals and overall league position. The xG table from the previous chapter shows that two of the teams which have implemented advanced pressing are actually low in standings due to other factors like finishing - Brighton and Sheffield United have the biggest negative margin in xG in the English Premier League. Advanced pressing, though, is not the only success factor. Teams still need to be capable of holding their defensive shape in order to avoid having large gaps between their defenders and their attackers, as well as creating chances and finishing them. Teams with overall weaker players will have a hard time doing something useful with the ball after winning it back. That being said, it is clear that at least in the Premier League, advanced pressing is efficient and produces good results.

REFERENCES

- [1] Andrienko G, Andrienko N, Budziak G, Dykes J, Fuchs G, von Landesberger T, Weber H. Visual analysis of pressure in football. *Data Mining and Knowledge Discovery*. 2017 Nov;31(6):1793–839. <https://doi.org/10.1007/s10618-017-0513-2>
- [2] Marcu V, Buhaş SD. Sports organizations - management and science. *Procedia - Social and Behavioral Sciences*. 2014;117:678–682. <https://doi.org/10.1016/j.sbspro.2014.02.281>
- [3] Buhas SD. Sports Management. From Institutionalism to Research. *GeoSport Soc*. 2015;2(1):26–32.
- [4] Andrienko G, Andrienko N, Budziak G, von Landesberger T, Weber H. Exploring pressure in football. In: *Proceedings of the 2018 International Conference on Advanced Visual Interfaces 2018* May 29. Castiglione della Pescaia Grosseto Italy, 1–3. <https://doi.org/10.1145/3206505.3206558>
- [5] Buhaş S, Herman GV, Ştef M. Aspects regarding speed development in football game in 12–14-year-old children. *GeoSport Soc*. 2018;8(1):21–30.
- [6] Buhaş SD, Stance L. The Relationship between Personality and Physical Activity. *GeoSport Soc*. 2017;7(2):72–77.
- [7] Dragoş P, Lucaci G, Trifa I, et al. Aspects Regarding the Influence of Communication on the Motivation of Employees in Some Sports Organizations. *Proceedings of the 4th International Conference of the Universitaria Consortium*

- (ICU 2018): The Impact of Sport and Physical Education Science on Today's Society. Bologna: Editografica S R L; 2018, 73-77.
- [8] Slaidiņš K, Fernāte A. Analysis on Classification of Football Technique. In: Society. Integration. Education. Proceedings of the International Scientific Conference. 2021 May 28;4:456-467. <https://doi.org/10.17770/sie2021vol4.6439>
- [9] Seidenschwarz P, Rumo M, Probst L, Schuldt H. A Flexible Approach to Football Analytics: Assessment, Modeling and Implementation. International Symposium on Computer Science in Sport 2019 Jul 8. Cham.: Springer; 2019, 19-27. https://doi.org/10.1007/978-3-030-35048-2_3
- [10] Spence J. A comparative analysis of a Category One Academy's U13, U14 and U16 football teams (Doctoral dissertation, University of Chichester).
- [11] Kilpatrick D. Inverting the Pyramid: A History of Football Tactics. J Sport Hist. 2011;38(3):530-1.
- [12] Marcu V, Buhaş S. Systematic analysis of sports activity. Discobolul. 2011;26(4):35-42.
- [13] Dragoş PF, Lucaciu, Dinis, I, Ştef M, Szabo-Alexi P, Buhaş S. Concepts concerning the content of children's training in some sport games. Proceedings of the 4th international conference of the Universitaria Consortium (ICU 2018): The impact of sport and physical education science on today's society. Pianoro, Bologna: Editografica SRL; 2018, 67-72.
- [14] Scutti G, Wendt JA. Football and Geopolitics. Geosport for Soc. 2016;5:100-106.
- [15] Bo GO. Tendency of Post-modernization in Tactics System of Football [J]. J Tianjin University of Sport. 2007;3.
- [16] Bate R. Football chance: tactics and strategy. Science and football; 1988.
- [17] Collet C. The possession game? A comparative analysis of ball retention and team success in European and international football, 2007-2010. J Sport Sci. 2013 Jan 1;31(2):123-36. <https://doi.org/10.1080/02640414.2012.727455>
- [18] Ma J. An Analysis of Formation Disruption in Soccer (Doctoral dissertation).
- [19] Kijewski T, Wendt JA. Polish Football Teams in the Champions League - Does the Budget Decide Everything? GeoSport Soc. 2019;11(2):101-112.
- [20] Robberechts P. Valuing the Art of Pressing. In: Proceedings of the StatsBomb Innovation In Football Conference 2019, 1-11. StatsBomb.
- [21] Manolache G, Savu C. Trends and approaches to football tomorrow. Annals of the University Dunarea de Jos of Galati: Fascicle XV: Physical Education & Sport Management. 2013 Jul;1(2).
- [22] Low B, Rein R, Raabe D, Schwab S, Memmert D. The porous high-press? An experimental approach investigating tactical behaviours from two pressing strategies in football. J Sport Sci. 2021 May 14;1-2. <https://doi.org/10.1080/02640414.2021.1925424>
- [23] Stokes JV, Luiselli JK, Reed DD, Fleming RK. Behavioral coaching to improve offensive line pass-blocking skills of high school football athletes. J Appl Behav Anal. 2010 Sep;43(3):463-72. <https://doi.org/10.1901/jaba.2010.43-463>
- [24] Otte FW, Millar SK, Klatt S. How does the modern football goalkeeper train?—An exploration of expert goalkeeper coaches' skill training approaches. J Sport Sci. 2020 Jun 17;38(11-12):1465-73. <https://doi.org/10.1080/02640414.2019.1643202>
- [25] Ormenişan S. Study on using pressing in modern football game. Studia Universitatis Babeş-Bolyai, Educatio Artis Gymnasticae. 2014 Mar 1;59(1).
- [26] Moura FA, Martins LE, Anido RO, Ruffino PR, Barros RM, Cunha SA. A spectral analysis of team dynamics and tactics in Brazilian football. J Sport Sci. 2013 Oct 1;31(14):1568-77. <https://doi.org/10.1080/02640414.2013.789920>
- [27] Dehoorne O, Wendt JA, Mikhailov A, Berdenov Z, Ilieş A. Cartographic representation of a sports (football) competition - UEFA Youth League (2013-2019). GeoSport Soc. 2019;11(2):86-100. <https://doi.org/10.30892/gss.1104-051>
- [28] Bojinov I, Bornn L. The pressing game: Optimal defensive disruption in soccer. In: 10th MIT Sloan Sports Analytics Conference; 2016.

Cite this article as:

Brîndescu S, Datcu F-R, Buda I-A.
Study on the efficiency of advanced pressing in the Premier League
Balt J Health Phys Act. 2021;13(Spec.Iss.1):115-122
doi: 10.29359/BJHPA.13.Spec.Iss1.11