applied sciences

MDPI

Article

Analysis of Physiological, Physical, and Tactical Responses in Small-Sided Games in Women's Soccer: The Effect of Numerical Superiority

Danillo Silveira Trombiero [1], Gibson Moreira Praça [2], Eduardo de Paula Amorim Borges [1], Claudio Andre Barbosa de Lira [1], Thiago José Leonardi [3], Lorenzo Laporta [4], Henrique de Oliveira Castro [5] and Gustavo De Conti Teixeira Costa [1,*]

[1] Núcleo de Estudo e Pesquisa Avançada em Esportes, Universidade Federal de Goiás, Goiânia 74690-900, Brazil; danilo@anapolis.go.gov.br (D.S.T.); eduardopaborges@hotmail.com (E.d.P.A.B.); claudioandre@ufg.br (C.A.B.d.L.)
[2] Centro de Estudos de Cognição e Ação, Universidade Federal de Minas Gerais, Belo Horizonte 31270-901, Brazil; gibson_moreira@yahoo.com.br
[3] Laboratório de Estudos Multidisciplinares em Esportes Escola de Educação Física, Fisioterapia e Dança, Universidade Federal do Rio Grande do Sul, Porto Alegre 90040-060, Brazil; thiago.leonardi@ufrgs.br
[4] Núcleo de Estudos em Performance Análysis Esportiva, Universidade Federal de Santa Maria, Santa Maria 97105-900, Brazil; laporta.lorenzo@ufsm.br
[5] Grupo de Estudos e Pesquisas em Educação Física e Esportes, Universidade Federal do Mato Grosso, Sinop 78550-728, Brazil; henriquecastro88@yahoo.com.br
* Correspondence: conti02@ufg.br

Abstract: Small-sided and conditioned games (SSGs) are pedagogical tools that help in soccer training, being used to solve tactical problems with the specific demands of the game. In this context, this study aimed to compare physical, physiological, and tactical responses in elite women's soccer in SSGs with numerical equality (3-a-side) and superiority (3-a-side + 1) in the offensive phase. The sample consisted of 16 female athletes participating in official national competitions. Two consecutive days of data collection were conducted, and a 4 min duration series was carried out. The variables analysed were the total distance covered, the distance covered at different speeds, maximum heart rate (HRmáx), mean heart rate, the spatial exploration index, the stretching index, length, width, and LpWratio. The results showed an increase in distance covered at speeds of 7.20–14.29 km/h (m) (effect size: medium) and a decrease in HRmáx (effect size: small) in the numerical superiority. Regarding tactical response, there was a decrease in the spatial exploration index (effect size: large), length (effect size: medium), and stretching index (effect size: large) for games played in the numerical superiority. Thus, it was observed that SSGs with numerical superiority in women's soccer suggest more clustered, less exploratory, and more positional behaviour of the athletes.

Keywords: match analysis; performance; training; acute responses

check for updates

Citation: Trombiero, D.S.; Praça, G.M.; Borges, E.d.P.A.; de Lira, C.A.B.; Leonardi, T.J.; Laporta, L.; Castro, H.d.O.; Costa, G.D.C.T. Analysis of Physiological, Physical, and Tactical Responses in Small-Sided Games in Women's Soccer: The Effect of Numerical Superiority. *Appl. Sci.* **2023**, *13*, 8380. https://doi.org/10.3390/app13148380

Academic Editor: Mark King

Received: 5 June 2023
Revised: 5 July 2023
Accepted: 17 July 2023
Published: 20 July 2023

1. Introduction

Soccer is the most popular sport worldwide, with more the 265 million practitioners from all ages, genders, and skill levels [1]. Women soccer players are growing among these practitioners [2,3]. For example, a study reported an increase of 7.5% in one year in the number of female players worldwide [4], and, currently, more than 1.2 million female players are registered over the world [5,6]. Therefore, women's soccer has been moving towards professionalisation, demanding an improvement in players' performances to enhance their physical, physiological, tactical, and technical responses to the current needs imposed by the game [7].

When considering teaching and training in soccer, regardless of gender, it can be observed that small-sided and conditioned games (SSG) are a pedagogical tool that allows the athlete to solve tactical problems arising from varied game situations [8–10]. SSGs offer the player different possibilities of interaction with the environment through task constraints, allowing for manipulation of the physiological, physical, tactical, and technical demands of the athlete specific to the demands of the game [11–14]. Thus, based on the possibilities that SSGs offer, coaches have the opportunity to adjust the configurations of these SSGs according to the training objectives [15–17], which, consequently, should be linked to the game model and its specificities [18,19].

Most research investigating training through SSGs has focused on different physical, physiological, and tactical aspects related to task restriction manipulation, such as field configuration, the relative area per player [20–22], limitations in the number of ball touches [23,24], changes in the scoring method with or without a goalkeeper [18,19], the presence or absence of goal [24], and changes in the rules [25,26], among others. Additionally, it is notable that most investigations have focused on SSGs in configurations with equal numbers of players between the teams [11,24] and almost exclusively with male participants [27].

Although research shows practical findings that are applicable to SSGs with numerical equality, it is necessary to consider that soccer is often played with numerical imbalances, temporarily or permanently [28]. At this point, SSGs with numerical superiority show a decrease in physical responses in the total distance covered, the distance covered at a high intensity (16 to 17.9 km/h), and distances covered at speeds of 7.3 to 14.4 km/h compared to configurations that use numerical equality [29,30]. Regarding physiological responses, a decrease in heart rate parameters in configurations with numerical superiority can be seen compared to configurations with numerical equality [19,29]. Concerning tactical responses, studies show that SSGs with numerical superiority can generate adjustments in the players' emergent tactical behaviour related to inter-individual and intra- and inter-team interactions, fewer offensive tactical actions with and without the ball in the configuration with numerical superiority, as well as a decrease in the spatial exploration index (SEI), length, width, stretching index, and LpWratio, thus demonstrating more clustered, less exploratory, and more positional behaviour of the team in numerical superiority [31–34].

From this, it can be seen that understanding the analysis of physical, physiological, and tactical responses through SSGs can provide important information to coaches about athlete performance, as well as manipulate the intended responses during training [35]. However, it is necessary to emphasise that the specificities of the type of game must be respected, and women's soccer presents singularities that distinguish it from men's soccer [36–38]. Furthermore, new research about women's soccer encourages the integration of physical, technical, and tactical characteristics to obtain more holistic insight about match performance [39].

In this context, acknowledging that SSGs are configured as a pedagogical training tool, that the desired responses are specific to the type of task executed, and that there is a paucity of literature on SSGs in elite women's soccer, the objective of this study was to compare the physical, physiological, and tactical responses of small-sided games with equal numerical distribution with those of small-sided games played with numerical superiority in elite women's soccer. The hypotheses of the present study are as follows: (1) in the game with numerical superiority, there will be a decrease in physical demands when compared to the game with equal numerical distribution; (2) in the game with numerical superiority, there will be a lower physiological response (maximum heart rate and average heart rate); and (3) in the game with numerical superiority, there will be a lower SEI, length, width, stretching index, and LpWratio when compared to the game with numerical equality. The results of the study should help coaches to understand how the game played by women professional soccer players changes in relation to the different game configurations, that is, with equality or numerical superiority.

2. Materials and Methods

2.1. Sample

Due to the challenge of gaining access to professional women's soccer teams, our sample was recruited through convenience. The study involved 16 women professional soccer athletes, with an average age of 26.00 ± 4.42 years, a height of 166.15 ± 6.18 cm, and a body fat percentage of 12.72% ± 5.54%. The sample consisted of four defenders, six midfielders (including two players assigned as floaters), and four forwards. The two goalkeepers participated in data collection but were not evaluated and were not included in the sample for this study. The players included in the study are officially registered with the Confederação Brasileira de Futebol and regularly participate in regional and national competitions, undergoing five training sessions per week and playing one official match per week. The athletes played in a club in the southeastern region of Brazil, which is among the three best clubs in Minas Gerais, with youth teams, as well as professional teams for men and women. Thus, the athletes had a technical committee formed by a supervisor, coaches, technical assistants, physical trainer, goalkeeper, coach, physiologist, nutritionists, psychologists, and performance analysts, among other professionals necessary for the day-to-day training of a professional football team. Participation in the study was conditional on the absence of injuries at the time of data collection, and as no athlete presented with injuries, none were excluded from the study. The study was approved by the Ethics Committee of the Universidade Federal de Goiás, under protocol CAAE: 65290217.2.00000.5083, which is available on the Brazil plataform (https://plataformabrasil.saude.gov.br/login.jsf, accessed on 1 June 2023), and was conducted according to the Declaration of Helsinki. All athletes consented to participate in the study by signing the informed consent form.

2.2. Procedures

Previous studies have reported that team composition impacts players' performance during small-sided games [40,41]. Also, playing position was reported to exert an influence on players' behaviour during game-based tasks [42–44]. For this reason, the four teams (A, B, C, and D) were kept constant over the data collection and were composed of a defender, a midfielder, and a forward to ensure similar positional characteristics as those found in formal gameplay situations [45,46]. The club's coaching staff selected the teams, as they knew each athlete's performance levels and characteristics.

After defining the team composition, the small-sided games (SSGs) took place on a 36 m × 27 m (length × width) field with natural grass [47] and regular-sized goals (2.44 m in height and 7.32 m in width). Two consecutive days of data collection were conducted with a 24 h interval between them. On each day, a 4 min duration series was carried out, resulting in four games, one for each team. The duration of each series is justified by using 4 min in protocols that assess physical, physiological, and tactical responses in small-sided games in soccer [47,48]. The games were played as follows: On the first day, Team A and Team B (AxB) played against each other in the configuration G + 3 vs. 3 + G, while Teams C and D (CxD) played in the configuration G + 3 vs. 3 + G + 1; and on the second day, Team A and Team B (AxB) played against each other in the configuration G + 3 vs. 3 + G + 1. Meanwhile, Teams C and D (CxD) played in the configuration G + 3 vs. 3 + G. It is noteworthy that in the configuration G + 3 vs. 3 + G + 1, one player, whose positional status was a midfielder, acted as a floater and only participated in the offensive phase for both teams, generating numerical superiority in the AxB and CxD games (Figure 1). This floater player was allowed to perform all offensive actions, including shooting at the goal. The opposing team was kept constant over the data collection to control the influence of the level of the opponents on the observed response [49].

The data were collected at the same location, and all games were recorded by a GOPRO Hero 8 4K (Black. GoPro Inc., San Mateo, CA, USA) camera, located diagonally to the playing field. All players participated in the data collection without changing team composition or matchups. During the collection, players were instructed to maintain a normal diet, and water consumption was allowed ad libitum during the intervals between

SSG. Each session began with 5 min of standardised warm-up, consisting of movements without the ball, progressive sprints with accelerations, and changes of direction.

	Games	
Session	AxB	CxD
1° day	3 vs. 3	3 vs. 3 +1
2° day	3 vs. 3 +1	3 vs. 3

Figure 1. Procedures for carrying out the games.

During the SSG, two referees were positioned on the field's sidelines to observe the game and apply the offside rules when necessary. Additional balls were placed around the field to ensure a quick restart of play when the ball went out of bounds. Coaches and researchers did not give the players any verbal encouragement or tactical instructions. The players wore global positioning system (GPS) devices during the matches. In previous research [50,51], good to excellent reliability and a low error were observed for tactical variables based on GPS (ICC > 0.9, standard error of measurement < 10%).

2.3. Physical Variables

The physical and positional data during the SSG were recorded by a 10 Hz GPS (Polar, Team Pro, Kempele, Finland). Each player wore a chest strap with the device attached, and the validity and reliability of the device were reported in a previous study [50]. Each player used the same GPS equipment unit during the data collection sessions. The GPS was turned on at the beginning of the warm-up to facilitate satellite identification and reduce data loss. Furthermore, it is reported that the weather was sunny during the entire data collection, which increases GPS accuracy. The variables related to physical demands were the total distance covered and the distance covered at speeds of 3.0–7.19 km/h, 7.20–14.29 km/h, and 14.30–19.69 km/h, according to a previous study [29].

2.4. Physiological Variables

In this study, HR was recorded at 1 Hz by heart rate monitors (Polar®, FT1, Kempele, Finland) compatible with the GPS interface during the GP. HRmax and HRmean were recorded, with HRmax being considered the highest HR value recorded during the GP, and HRmean being considered the average of all HR values recorded during each session.

2.5. Tactical Variables

The positional data during the SSG were recorded by a 10 Hz GPS device (Polar, Team Pro, Kempele, Finland). Each player wore a chest strap with the device connected to it. The validity and reliability of the device have been reported in a previous study [51]. The tactical behaviour of players and teams was analysed by processing the positional data provided by the GPS device, as previously adopted in the literature [52,53], using the software MATLAB R2010a (The MathWorks Inc., Natick, MA, USA). Each player's latitude and longitude data were synchronised and converted into meters using the Universal Transverse Mercator (UTM) coordinate system and a MATLAB routine [54]. The corners of the field were manually obtained by the researchers in every field and were adopted as the referential system for the positional analysis. The data were smoothed using a second-order 5 Hz Butterworth low-pass filter. After converting the positional data into meters, a rotation matrix was calculated for each game with the positions of the field vertices, aligning the length of the playing field along the x-axis and the width along the y-axis. Then, the rotation matrix was applied to players' positional data for alignment with the playing field referential [55].

After the data collection, the players' analysis during the SSG was performed by identifying parameters: (a) SEI (m)—defined as the standard deviation of the players' positioning in relation to their centroid position at each moment of the game, indicating how exploratory the player's behaviour was, with higher values of the spatial exploration index indicating more exploratory behaviour, and lower values indicating less exploratory behaviour; (b) length (m) and width (m)—determined by the distance between the farthest players in length and other players on the right and left in width; (c) stretching index (m)—defined as the dispersion of the players from the geometric centre, with higher values indicating greater dispersion; (d) length per width ratio—LpWratio—(ua)—indicates the preferred displacement axis of a team on the field, with values above 1 ua indicating a more lengthwise positioning, and values below 1ua indicating a more widthwise positioning [46,56].

2.6. Statistical Analysis

The data were presented using mean and standard deviation. The Shapiro–Wilk test was performed to assess the normality of the data. For variables that presented normal distribution, i.e., both physical and tactical responses, a paired t-test was used, whereas for data that did not present normal distribution, i.e., physiological response, the Wilcoxon non-parametric test was used. The effect size was calculated using Cohen's d, using the following classification for effect sizes: small 0.2–0.49; medium 0.5–0.79; large > 0.8 [6]. All statistical analyses were performed using the statistical package Sigma Plot 11. The adopted level of significance was 5%.

3. Results

3.1. Physical Variables

Table 1 shows that there was no difference in the total distance covered ($t(23) = 1.297$, $p = 0.20$, $d = 0.27$), in the distances covered at speeds of 3.0–7.19 km/h (m) ($t(23) = 0.314$, $p = 0.75$, $d = 0.11$), and at speeds of 14.30–19.69 km/h (m) ($t(23) = 0.918$, $p = 0.36$, $d = 0.23$). On the other hand, there was a difference in the distances covered at speeds of 7.20–14.29 km/h (m) ($t(23) = 2.725$, $p = 0.01$, $d = 0.60$) when comparing the game with numerical equality to the game with numerical superiority.

Table 1. Mean ± SD of professional women players' physical responses during small-sided games with numerical equality and superiority.

	Numerical Equality (95%CI)	Numerical Superiority (95%CI)	*p*-Value	Effect Size
Total Distance (m)	393 ± 37 (377–409)	403 ± 35 (387–418)	0.20	0.27—Small
Distance 3.0–7.19 km/h (m)	161 ± 19 (152–158)	159 ± 16 (152–165)	0.75	0.11—Small
Distance 7.20–14.29 km/h (m)	176 ± 31 (163–190)	195 ± 32 (181–209)	0.01 *	0.60—Medium
Distance 14.30–19.69 km/h (m)	33 ± 14 (27–39)	29 ± 19 (21–37)	0.36	0.23—Small

* Significant differences ($p < 0.05$).

3.2. Physiological Variables

Table 2 shows that there was no difference in the average heart rate (bpm) ($Z = 0.992$; $p = 0.33$; $d = 0.12$) when comparing the game with numerical equality and that with numerical superiority. However, there was a difference in the maximum heart rate (bpm) ($Z = 2.451$; $p = 0.01$; $d = 0.34$) when comparing the game with numerical equality to that with numerical superiority.

Table 2. Mean ± SD of professional women players' physiological responses during small-sided games with numerical equality and superiority.

	Numerical Equality (95%CI)	Numerical Superiority (95%CI)	p-Value	Effect Size
$FC_{média}$ (bpm)	165 ± 18 (157–173)	167 ± 14 (161–173)	0.33	0.12—Small
$FC_{máx.}$ (bpm)	185 ± 11 (180–189)	181 ± 12 (176–186)	0.01 *	0.34—Small

* Significant differences ($p < 0.05$).

3.3. Tactical Variables

Table 3 shows that there was a difference in the spatial exploration index (t(23) = 4.404, p = <0.001, d = 0.98), depth (t(23) = 4.110, p = <0.001, d = 0.71), and elongation index (t(23) = 2.789, p = <0.02, d = 1.20). On the other hand, there was no difference in width (t(23) = 1.287, p = 0.21, d = 0.31) or in the width/depth ratio factor (t(23) = 0.459, p = 0.660, d = 0.15).

Table 3. Mean ± SD of professional women players' tactical responses during small-sided games with numerical equality and superiority.

	Numerical Equality (95%CI)	Numerical Superiority (95%CI)	p-Value	Effect Size
SEI (m)	7.35 ± 0.83 (7.02–7.68)	6.53 ± 0.84 (6.19–6.87)	<0.001 *	0.98—Large
Depth (m)	20.34 ± 1.90 (19.58–21.10)	18.86 ± 2.24 (17.96–19.76)	<0.001 *	0.71—Medium
Width (m)	15.72 ± 1.54 (15.10–16.33)	14.97 ± 3.00 (13.77–16.77)	0.21	0.31—Small
Elongation index (m)	8.72 ± 0.40 (8.44–8.99)	8.20 ± 0.46 (7.88–8.52)	0.02 *	1.20—Large
Width/depth ratio	67.27 ± 13.47 (57.93–76.60)	69.35 ± 13.01 (60.33–78.37)	0.660	0.15—Small

* Significant differences ($p < 0.05$).

4. Discussion

Small-sided games (SSG) are a training tool that use task constraints to optimise the development of physical, physiological, technical, and tactical aspects in soccer players. Although there is already a lot of knowledge about the use of SSGs for training in men's soccer, especially regarding different SSG configurations [21,23,29,57], little is known about women's soccer. Therefore, the present study aimed to compare physical, physiological, and tactical responses in small-sided games with equal and numerical superiority in elite women's soccer. The first hypothesis of our study, which predicted a decrease in physical response in games with numerical superiority compared to games with numerical equality, was refuted. Our results showed a greater distance covered at speeds between 7.20–14.29 km/h (m) in the numerical superiority configuration, as well as a similarity between the configurations in the other physical variables analysed. These results partially support the study by Sánchez-Sánchez et al. [58], which found that in configurations of variable superiority (4 vs. 4 + 1) and fixed superiority (5 vs. 4), a greater total distance is covered, and a greater distance is covered at speeds between 8.0–13.0 km/h and 13.01–18.0 km/h when compared to the numerical equality configuration (4 vs. 4). However, these findings were inconsistent with other studies in the field, which indicate a greater physical response in games with numerical equality [59,60]. In this context, some studies have shown that there is a decrease in physical response when extra players are added, in terms of total distance covered and distance covered at speeds above 14,0 km/h [29,61,62], as well as an increase in the distance covered at moderate speeds that go up to 7.2 km/h [29] or 9.9 km/h [61].

Despite the contradictory results found in the literature, it is still possible to observe that there is no consistency in the studies in the area regarding specific physical responses to

SSG formats [17,26,30]. For example, the overall results of Praça, Custódio, and Greco [30] disagree with our results, but when considering the distances covered between speeds of 0.00–7.2 km/h and 14.4–21.5 km/h, which were similar between 3 vs. 3, 4 vs. 3 (fixed superiority), and 3 vs. 3 + 2 (variable superiority) SSG, there is an agreement with our results in professional women's soccer. In addition, considering the study by Hill-Hass, Coutts, Dawson, and Rowsell [59], which did not observe differences in the distance covered between speeds of 13–21 km/h between equal and superior numerical configurations, there is also a similarity with our results found in professional women's soccer.

A probable explanation for the current results could be the composition of the sample consisting of professional women soccer players, as studies with numerical imbalance have so far only been conducted with male and youth athletes [19,28,60,63,64]. In this vein, it is known that in conditions of numerical imbalance, professional athletes demonstrate greater physical responses compared to amateur soccer players [34,65], as well as different physical responses for different player positions, with midfielders being more active in the offensive phase, usually covering greater distances than forwards and defenders [46]. In this sense, it is likely that the increase in distance covered in numerical superiority at speeds of 7.20–14.29 km/h occurred because the floaters were midfielders and carried out the transition from defence to attack, justifying greater distances covered at the aforementioned speeds.

Regarding the second hypothesis of our study, which posited that there would be a lower physiological response in games with numerical superiority, there was partial confirmation, as the maximum heart rate (HRmax.) was lower in the numerical superiority configuration compared to the equal numerical configuration, and there was no difference in the average heart rate (HRmean) between the configurations. In this sense, some studies partially agree with the results found in the present study, since these have analysed the influence of numerical superiority on the physiological responses of male base players and observed lower physiological responses of HRmax. and HRmean in the numerical superiority configuration compared to the equal numerical configuration [19,29,66]. However, a study by Asian-Clemente et al. [9] with semi-professional male soccer players showed an increase in HRmean and HRmax. responses in the numerical superiority configuration.

Based on the results of the physiological response, it should be considered that although the discussion has focused on research with male players, it is known that HRmax. responses are similar between male and female genders [67]. In addition, the literature demonstrates a reduction in HRmax in games with numerical superiority, in agreement with the results found, and this may occur due to the permanent addition of a player in the reduced game configuration. In this context, it is observed that there are greater physiological responses in larger areas per player both in male soccer [22] and in female soccer [5]. Therefore, adding the reduced relative area per player may have led to the physiological response of HRmax. On the other hand, the physiological response of HRmean may not have changed because, although there was a smaller relative area, the floater did not represent a tactical advantage for the attack, as observed in a previous study [31]. Thus, this player probably did not provide a tactical advantage to the attacking team, and the physiological response was similar to the equal numerical configuration.

The third hypothesis of our study, which predicted that in games with numerical superiority, there would be lower values of SEI, length, width, stretching index, and LpWratio compared to games with numerical equality, was partially confirmed. Our results showed a decreased SEI, length, and stretching index when playing with numerical superiority. These findings partially corroborate studies in the same area, which showed that there were fewer offensive tactical actions with and without the ball [21,31] and increased effective use of space (width and length) [32]. However, it has also been observed that players exhibit a higher frequency of offensive unity, resulting in decreased SEI, length, and stretching index, indicating more clustered, less exploratory, and more positional behaviour in the numerical superiority configuration [31,32]. Furthermore, teams in numerical superiority prefer to promote less exploratory behaviour and lower game variability, and a numerical inferiority scenario stimulates players to adopt a more central position to defend their own goal [64]. However, Canton et al. [68] demonstrated that using extra players allows for more exploratory tactical behaviours in youth and professional athletes.

Taking into account that the SEI measures the average distance of the player from their midpoint within a given time interval, and that this variable indicates how much a player explores the field during their movements [69], it is likely that the addition of the floater made the management of attacking space more difficult due to the alternating nature of the floater within teams. Another likely explanation for the decrease in tactical responses observed in the present study (SEI, length, and stretching index) is the reduction in relative area per player, which occurs in the numerical superiority configuration, since smaller relative areas imply a higher frequency of ball losses, disputed balls, and shots to the goal [21].

When considering the width and LpWratio, it was observed that the players used the width of the field in the same way regardless of the configuration, suggesting less exploratory behaviour. The characteristic of the floater as a midfielder influences the collective dynamics of the team [43]. In this context, since the floater in our sample was a midfielder, this fact probably promoted a more positional adjustment of the athletes with an incentive for ball circulation. Moreover, studies indicate that low variation in the LpWratio tends to reflect the positional stability of the players [55,56], corroborating the results of the present study.

Analysis of the game in women's soccer shows that, although there are similarities between genders [7,70], caution should be exercised when extrapolating such findings to women's soccer, as there are physical [27,37,71], physiological [1,6,72], technical [73], and tactical differences [36,38,74].

The divergences found between the results of the present study and the literature on SSG are probably due to the previous studies investigating male categories. In addition, the use of different instruments to compare tactical behaviour, as was the case with the positional data in the present study carried out through GPS, may generate different results from those collected with observational instruments based on core tactical principles, such as those observed with FUTSAT [47]. Additionally, our results support the notion that coaches should plan and design their training sessions considering different SSG formats in women's soccer and their physical, physiological, and tactical responses.

As a limitation of the study, the fact that numerical superiority was created by adding a floater who played for both teams during the offensive phase should be considered. In this sense, it is unknown how much time each team played in this condition of superiority. In addition, the sample was for convenience, and we did not analyse psychological factors that can influence performance. Considering that the duration of temporary numerical imbalance during defensive/offensive phases can influence player responses, we suggest that future studies should investigate the impact of the time spent during attack and defence phases on physical demands in numerical imbalance scenarios.

5. Conclusions

The configuration of SSGs with numerical superiority in women's soccer increased physical responses in the distances covered at speeds of 7.20–14.29 km/h, compared to the configuration of numerical equality. Similarly, in games with numerical superiority, there was a decrease in the physiological response concerning the maximum heart rate compared to games with numerical equality. Regarding tactical responses, there was a decrease in the SEI, length, and stretching index. Based on the above, coaches of women's soccer can use the information in this study to support adjustments to the restrictions and configurations of SSGs to align with the main objectives of each training session they wish to undertake.

Author Contributions: Study design: D.S.T., G.M.P. and G.D.C.T.C.; Data collection: D.S.T. and E.d.P.A.B.; Literature search: C.A.B.d.L. and H.d.O.C.; Writing: L.L. and T.J.L.; Data analysis: D.S.T. and E.d.P.A.B.; Data interpretation: G.M.P. and G.D.C.T.C.; Review: G.D.C.T.C., D.S.T., G.M.P., E.d.P.A.B., C.A.B.d.L., H.d.O.C., L.L. and T.J.L. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior—Brasil (CAPES)—Finance Code 001.

Institutional Review Board Statement: Ethics Committee of the Universidade Federal de Goiás, under CAAE: 65290217.2.00000.5083.

Informed Consent Statement: Written informed consent has been obtained from the participant(s) to publish this paper.

Data Availability Statement: The data research is available in the paper.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Walker, A.J.; McFadden, B.A.; Sanders, D.J.; Rabideau, M.M.; Hofacker, M.L.; Arent, S.M. Biomarker response to a competitive season in Division I female soccer players. *J. Strength Cond.* **2019**, *33*, 2622–2628. Available online: https://journals.lww.com/nsca-jscr/Fulltext/2019/10000/Biomarker_Response_to_a_Competitive_Season_in.5.aspx (accessed on 25 January 2023). [CrossRef] [PubMed]
2. Gushikem, R.H.; Soares, V.N.; CrenChiminazzo, J.G.; Fernandes, P.T. Futebol feminino: Aspectos emocionais e cognitivos. *Ver. Bras. Futs. Futeb.* **2019**, *11*, 655–661.
3. Martinez-Lagunas, V.; Niessen, M.; Hartmann, U. Women's football: Player characteristics and demands of the game. *J. Sport Health Sci.* **2014**, *3*, 258–272. Available online: https://reader.elsevier.com/reader/sd/pii/S2095254614000982?token=63BC59BE37CD0FB412E81C3C72C7A51A8D45AD7099FEB52F032197C0778871A5EF2553835306B87851BAFB6DCCD54149&originRegion=us-east-1&originCreation=20230215183242 (accessed on 12 February 2023). [CrossRef]
4. Ayuso-Moreno, R.; Fuentes-García, J.P.; Collado-Mateo, D.; Villafaina, S. Heart rate variability and pre-competitive anxiety according to match demand level in female soccer athletes. *Physiol. Behav.* **2020**, *222*, 112926. Available online: https://reader.elsevier.com/reader/sd/pii/S0031938420302407?token=64A86EF1BAEBF3738DC06D69EFA24EEEA4247469BF0D73C987BF8D22147C5C6E1CF07EBC0C40A94EA662527845388EE0&originRegion=us-east-1&originCreation=20230214233634 (accessed on 2 February 2023). [CrossRef]
5. Dios-Álvarez, V.; Lorenzo-Martínez, M.; Padrón-Cabo, A.; Rey, E. Small-sided games in female soccer players: A systematic review. *J. Sports Med. Phys. Fit.* **2022**, *62*, 1474–1480. [CrossRef]
6. López-Fernández, J.; Sánchez-Sánchez, J.; Rodríguez-Cañamero, S.; Ubago-Guisado, E.; Colino, E.; Gallardo, L. Physiological responses, fatigue and perception of female soccer players in small games with different field sizes and sports surfaces. *Biol. Sport* **2018**, *35*, 291–299. [CrossRef]
7. Casal, C.A.; Maneiro, R.; Ardá, A.; Losada, J.L. Gender differences in technical-tactical behaviour of La Liga Spanish football teams. *J. Hum. Sport Exerc.* **2021**, *16*, 37–52. Available online: https://rua.ua.es/dspace/bitstream/10045/101110/6/JHSE_16-1_04.pdf (accessed on 6 May 2023). [CrossRef]
8. Aquino, R.L.; Marques, R.F.; Gonçalves, L.G.; Vieira, L.H.; Bedo, B.L.; Moraes, C.; Menezes, R.P.; Santiago, P.R.; Puggina, E.F. Proposta de sistematização de ensino do futebol baseada em jogos: Desenvolvimento do conhecimento tático em jogadores com 10 e 11 anos de idade. *Motricidade* **2015**, *11*, 115–128. Available online: https://revistas.rcaap.pt/motricidade/article/view/3724/5301 (accessed on 12 February 2023).
9. Asian-Clemente, J.; Rabano-Muñoz, A.; Muñoz, B.; Franco, J.; Suarez-Arrones, L. Can Small-side Games Provide Adequate High-speed Training in Professional Soccer? *Int. J. Sports Med.* **2020**, *42*, 523–528. [CrossRef]
10. Clemente, F.M.; Sarmento, H. The effects of small-sided soccer games on technical actions and skills: A systematic review. *Hum. Mov.* **2020**, *21*, 100–119. [CrossRef]
11. Branquinho, L.; Ferraz, R.; Travassos, B.; Marinho, D.A.; Marques, M.C. Effects of Different Recovery Times on Internal and External Load During SmallSided Games in Soccer. *Sports Health* **2021**, *13*, 324–331. [CrossRef]
12. Clemente, F.M.; Praça, G.M.; Aquino, R.; Castillo, D.; Raya-González, J.; Rico-González, M.; Ramirez-Campillo, R. Effects of pitch size on soccer players' physiological, physical, technical, and tactical responses during small-sided games: A meta-analytical comparison. *Biol. Sport* **2023**, *40*, 111–147. [CrossRef]
13. Giménez, J.V.; Liu, H.; Lipińska, P.; Szwarc, A.; Rompa, P.; Gómez, M.A. Physical responses of professional soccer players during 4 vs.4 small-sided games with mini-goals according to rule changes. *Biol. Sport* **2018**, *35*, 75–81. [CrossRef]

14. Travassos, B.; Vilar, L.; Araújo, D.; McGarry, T. Tactical performance changes with equal vs unequal numbers of players in small-sided football games. *Int. J. Perform. Anal. Sport* **2014**, *14*, 594–605. Available online: https://www.tandfonline.com/doi/epdf/10.1080/24748668.2014.11868745?needAccess=true&role=button (accessed on 27 May 2023). [CrossRef]
15. Clemente, F.M.; Martins, F.M.; Mendes, R.S. Periodization based on small- sided soccer games: Theoretical considerations. *J. Strength Cond.* **2014**, *36*, 34–43. Available online: https://journals.lww.com/nsca-scj/Fulltext/2014/10000/Periodization_Based_on_Small_Sided_Soccer_Games_.4.aspx (accessed on 15 February 2023). [CrossRef]
16. Lacome, M.; Simpson, B.M.; Cholley, Y.; Lambert, P.; Buchheit, M. Small-sided games in elite soccer: Does one size fits all? *Int. J. Sports Physiol. Perform.* **2018**, *13*, 568–576. [CrossRef]
17. Martín-García, A.; Castellano, J.; Villanueva, A.M.; Gómes-Díaz, A.; Cos, F.; Casamichana, D. Physical Demands of Ball Possession Games in Relation to the Most Demanding Passages of a Competitive Match. *J. Sports Sci. Med.* **2020**, *19*, 1–9. Available online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7039032/ (accessed on 16 May 2023).
18. Silva, D.C.; Resende, Í.B.; Vasconcellos, F.; Praça, G.M.; Teoldo, I. Comparison between Under-13 and Under-15 Soccer Players in Small-Sided and Conditioned Games. *Motricidade* **2020**, *16*, 393–399.
19. Sánchez-Sánchez, J.; Hernández, D.; Casamichana, D.; Martínez-Salazar, C.; Ramirez-Campillo, R.; Sampaio, J. Heart rate, technical performance, and session-rpe in elite youth soccer small-sided games played with wildcard players. *J. Strength Cond.* **2017**, *31*, 2678–2685. Available online: https://journals.lww.com/nsca-jscr/Fulltext/2017/10000/Heart_Rate,_Technical_Performance,_and_Session_RPE.5.aspx (accessed on 9 March 2023). [CrossRef]
20. Casamichana, D.; Bradley, P.S.; Castellano, J. Influence of the Varied Pitch Shape on Soccer Players Physiological Responses and Time-Motion Characteristics During Small-Sided Games. *J. Hum. Kinet.* **2018**, *64*, 171–180. Available online: https://sciendo.com/article/10.1515/hukin-2017-0192 (accessed on 22 May 2023). [CrossRef]
21. Moreira, P.E.; Barbosa, G.F.; Murta, C.D.; Perez Morales, J.C.; Bredt, S.D.; Praça, G.M.; Greco, P.J. Network analysis and tactical behaviour in soccer smallsided and conditioned games: Influence of absolute and relative playing areas on different age categories. *Int. J. Perform. Anal. Sport* **2020**, *20*, 64–77. Available online: https://www.tandfonline.com/doi/full/10.1080/24748668.2019.1705642?scroll=top&needAccess=true&role=tab (accessed on 14 May 2023). [CrossRef]
22. Praça, G.M.; Silva, M.V.; Sousa, R.B.; Morales, J.C.; Greco, P.J. Small-Sided Soccer Games with Larger Relative Areas Result in Higher Physical and Physiological Responses: A Systematic and Meta-Analytical Review. *J. Hum. Kinet.* **2022**, *10*, 163–176. Available online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8884881/ (accessed on 10 June 2023). [CrossRef] [PubMed]
23. Sousa, R.B.; Bredt, S.G.; Greco, P.J.; Clemente, F.M.; Teoldo, I.; Praça, G.M. Influence of limiting the number of ball touches on players' tactical behaviour and network properties during football small-sided games. *Int. J. Sports Physiol. Perform.* **2019**, *19*, 999–1010. Available online: https://www.tandfonline.com/doi/full/10.1080/24748668.2019.1689751?scroll=top&needAccess=true&role=tab (accessed on 13 May 2023).
24. Younesi, S.; Rabbani, A.; Manuel Clemente, F.; Sarmento, H.; Figueiredo, A. Session-to-session variations of internal load during different small-sided games: A study in professional soccer players. *Res. Sports Med.* **2021**, *29*, 462–474. [CrossRef] [PubMed]
25. Machado, J.C.; Barreira, D.; Teoldo, I.; Travassos, B.; Júnior, J.B.; Santos, J.O.; Scaglia, A.J. How Does the Adjustment of Training Task Difficulty Level Influence Tactical Behavior in Soccer? *Res. Q. Exerc. Sport* **2019**, *90*, 403–416. Available online: https://ubibliorum.ubi.pt/bitstream/10400.6/7560/1/2019_Joao%20Machado_How%20Does%20the%20Adjustment%20of%20Training%20Task%20Difficulty%20Level%20Influence%20Tactical%20Behavior%20in%20Soccer.pdf (accessed on 10 May 2023). [CrossRef]
26. Sarmento, H.; Clemente, F.M.; Harper, L.D.; Costa, I.T.; Owen, A.; Figueiredo, A.J. Small sided games in soccer: A systematic review. *Int. J. Perform. Anal. Sport* **2018**, *18*, 693–749. Available online: https://www.tandfonline.com/doi/full/10.1080/24748668.2018.1517288?scroll=top&needAccess=true&role=tab (accessed on 9 May 2023). [CrossRef]
27. Datson, N.; Drust, B.; Weston, M.; Jarman, I.H.; Lisboa, P.J.; Gregson, W. Match physical performance of elite female soccer players during international competition. *J. Strength Cond.* **2017**, *31*, 2379–2387. Available online: https://journals.lww.com/nsca-jscr/Fulltext/2017/09000/Match_Physical_Performance_of_Elite_Female_Soccer.5.aspx (accessed on 15 May 2023). [CrossRef]
28. Rábano-Muñoz, A.; Clemente, J.A.; Villarreal, E.S.; Nayler, J. Age-Related Differences in the Physical and Physiological Demands during Small-Sided Games with Floaters. *Sports* **2019**, *7*, 79. Available online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6524370/ (accessed on 14 May 2023). [CrossRef]
29. Praça, G.M.; Bredt, S.G.; Torres, J.O.; Custódio, I.J.; Andrade, A.G.; Morales, J.C.; Greco, P.J. Infuence of numerical superiority and players' tactical knowledge on perceived exertion and physical and physiological demands in soccer small-sided games. *J. Sport Psychol.* **2018**, *27*, 31–38.
30. Praça, G.M.; Custódio, I.J.; Greco, P.J. Numerical superiority changes the physical demands of soccer players during small-sided games. *Rev. Bras. Cineantropom. Hum.* **2015**, *17*, 269–279. Available online: https://www.scielo.br/j/rbcdh/a/wdSbfj4P5sPDDG6BpspMBLt/?lang=en (accessed on 22 May 2023). [CrossRef]
31. Moniz, F.; Scaglia, A.J.; Sarmento, H.; Calvo, T.G. Effect of an Inside Floater on Soccer Players Tactical Behaviour in Small Sided and Conditioned Games. *J. Hum. Kinet.* **2020**, *71*, 67–177. Available online: https://www.researchgate.net/publication/339003554_Effect_of_an_Inside_Floater_on_Soccer_Players_Tactical_Behaviour_in_Small_Sided_and_Conditioned_Games (accessed on 14 May 2023). [CrossRef]

32. Padilha, M.B.; Guilherme, J.; Olivares, J.S.; Roca, A. The influence of floaters on players' tactical behaviour in small-sided and conditioned soccer games. *Int. J. Perform. Anal. Sport* **2017**, *17*, 721–736. Available online: https://www.researchgate.net/publication/320805917_The_influence_of_floaters_on_players\T1\textquoteright_tactical_behaviour_in_small-sided_and_conditioned_soccer_games (accessed on 14 May 2023). [CrossRef]
33. Silva, P.; Esteves, P.T.; Correia, V.; Davids, K. Effects of manipulations of player numbers vs. field dimensions on inter-individual coordination during small-sided games in youth football. *Int. J. Perform. Anal. Sport* **2015**, *15*, 641–659. Available online: https://www.researchgate.net/publication/280232306_Effects_of_manipulations_of_player_numbers_vs_Field_dimensions_on_inter-individual_coordination_during_small-sided_games_in_youth_football (accessed on 12 May 2023). [CrossRef]
34. Torrents, C.L.; Vicente, E.; Sampaio, J. Emergence of exploratory, technical and tactical behavior in small-sided soccer games when manipulating the number of teammates and opponents. *PLoS ONE* **2016**, *11*, e0168866. [CrossRef]
35. Praça, G.M.; Andrade, A.G.; Abreu, C.O.; Moreira, P.E.; Clemente, F.M.; Aquino, R. Manipulating the pitch size constrains the players' positioning during unbalanced soccer small-sided games played by different age groups. *Kinesiology* **2021**, *53*, 206–214. Available online: https://hrcak.srce.hr/file/385586 (accessed on 12 May 2023). [CrossRef]
36. Iván-Baragaño, I.; Maneiro, R.; Losada, J.L.; Ardá, A. Posesión de balón en fútbol femenino: El juego de las mejores selecciones. *Retos* **2022**, *44*, 1155–1162. Available online: https://recyt.fecyt.es/index.php/retos/article/view/92584/68024 (accessed on 14 May 2023). [CrossRef]
37. O'Brien-Smith, J.; Bennett, K.; Fransen, J.; Smith, M.R. Same or different? A comparison of anthropometry, physical fitness and perceptual motor characteristics in male and female youth soccer players. *Scienc. Med. Footb.* **2019**, *4*, 37–44. [CrossRef]
38. Scanlan, M.; Harms, C.; Wilkie, J.C.; Ma'ayah, F. The creation of goal scoring opportunities at the 2015 women's world cup. *Int. J. Sports Sci.* **2020**, *15*, 803–808. [CrossRef]
39. Harkness-Armstrong, A.; Till, K.; Datson, N.; Myhill, N.; Emmonds, S. A systematic review of match-play characteristics in women's soccer. *PLoS ONE.* **2022**, *17*, e0268334. Available online: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0268334 (accessed on 30 May 2023). [CrossRef]
40. Köklü, Y.; Ersöz, G.; Alemdaroglu, U.; Asci, A.; Özkan, A. Physiological responses and time-motion characteristics of 4-a-side small-sided game in young soccer players: The influence of different team formation methods. *J. Strength Cond. Res.* **2012**, *26*, 3118–3123. [CrossRef]
41. Praça, G.M.; Morales, J.C.; Moreira, P.E.; Peixoto, G.H.; Bredt, S.T.; Chagas, M.H.; Teoldo, I.; Greco, P.J. Tactical behavior in soccer small-sided games: Influence of team composition criteria. *Rev. Bras. Cineantropom. Hum.* **2017**, *19*, 354–363. [CrossRef]
42. Konefał, M.; Chmura, P.; Zając, T.; Chmura, J.; Kowalczuk, E.; Andrzejewski, M. Evolution of technical activity in various playing positions, in relation to match outcomes in professional soccer. *Biol. Sport* **2019**, *36*, 181. [CrossRef] [PubMed]
43. Praça, G.M.; Clemente, F.M.; Andrade, A.G.; Morales, J.C.; Greco, P.J. Network analysis in small-sided and conditioned soccer games: The influence of additional players and playing position. *Kinesiology* **2017**, *49*, 185–193. [CrossRef]
44. Praça, G.M.; Custódio, I.J.; Silva, M.V.; Andrade, A.G.; Greco, P.J. Are the physical demands influenced by the playing position during soccer small-sided games? *Rev. Bras. Med. Esporte* **2017**, *23*, 399–402. [CrossRef]
45. Bredt, S.G.; Praça, G.M.; Figueiredo, L.S.; Paula, L.V.; Silva, P.C.; Andrade, A.G.; Greco, P.J.; Chagas, M.H. Reliability of physical, physiological and tactical measures in small-sided soccer Games with numerical equality and numerical superiority. *Rev. Bras. Cineantropom. Hum.* **2016**, *18*, 603–610. Available online: https://www.scielo.br/j/rbcdh/a/TQKFYbCjPKMfNmpfkR6bQzj/?format=pdf&lang=en (accessed on 15 May 2023).
46. Praça, G.M.; Silva, M.V.; Sousa, R.B.; Morales, J.C. Physical demand in soccer small-sided games: Influence of team composition. *Rev. Bras. Med. Esporte* **2020**, *26*, 230–233. Available online: https://www.scielo.br/j/rbme/a/NF8Mx3BrYDT86DxNWzfMFcy/?format=pdf&lang=en (accessed on 13 May 2023). [CrossRef]
47. Costa, T.I.; Garganta, J.; Greco, P.J.; Mesquita, J.M. Sistema de avaliação táctica no futebol (FUT-SAT): Desenvolvimento e validação preliminar. *Motricidade* **2011**, *7*, 69–83. [CrossRef]
48. López-Fernández, J.; Leonor, G.; Fernández-Luna, Á.; Villacañas, V.; Garcia-Unanue, J.; Sánchez-Sánchez, J. Pitch Size and Game Surface in Different Small-Sided Games. Global Indicators, Activity Profile, and Acceleration of Female Soccer Players. *J. Strength Cond.* **2019**, *33*, 831–838. Available online: https://journals.lww.com/nsca-jscr/Fulltext/2019/03000/Pitch_Size_and_Game_Surface_in_Different.27.aspx (accessed on 3 May 2023). [CrossRef]
49. Folgado, H.; Duarte, R.; Fernandes, O.; Sampaio, J. Competing with Lower Level Opponents Decreases Intra-Team Movement Synchronization and Time-Motion Demands during Pre-Season Soccer Matches. *PLoS ONE* **2014**, *9*, e97145. [CrossRef]
50. Akyildiz, Z.; Yildiz, M.; Clemente, F.M. The reliability and accuracy of Polar Team Pro GPS units. *Proc. Inst. Mech. Eng. Part P J. Sports Eng. Technol.* **2022**, *236*, 83–89. [CrossRef]
51. Praça, G.; Abreu, C.; Rochael, M.; Moreira, P. How reliable are the tactical measures obtained in soccer small-sided games? A test-retest analysis of observational instruments and GPS-based variables. *Proc. Inst. Mech. Eng. Part P J. Sports Eng. Technol.* **2022**. [CrossRef]
52. Low, B.; Coutinho, D.; Gonçalves, B.; Rein, R.; Memmert, D.; Sampaio, J. A systematic review of collective tactical behaviours in football using positional data. *Sport Med.* **2020**, *50*, 343–385. [CrossRef]
53. Praça, G.M.; Chagas, M.H.; Bredt, S.G.; Andrade, A.G.; Custódio, I.J.; Rochael, M. The influence of the offside rule on players' positional dynamics in soccer small-sided games. *Sci. Med. Footb.* **2021**, *5*, 144–149. [CrossRef]

54. Palacios, R. deg2utm. MATLAB Central File Exchange. 2023. Available online: http://www.mathworks.com/matlabcentral/fileexchange/10915 (accessed on 30 May 2023).
55. Folgado, H.; Lemmink, K.A.; Frencken, W.; Sampaio, J. Length, width and centroid distance as measures of teams tactical performance in youth football. *Eur. J. Sport Sci.* **2014**, *14*, S487–S492. [CrossRef]
56. Coito, N.; Davids, K.; Folgado, H.; Bento, T.; Travassos, B. Capturing and quantifying tactical behaviors in small-sided and conditioned games in soccer: A systematic review. *Res. Q. Exerc. Sport* **2022**, *93*, 189–203. Available online: https://www.tandfonline.com/doi/epdf/10.1080/02701367.2020.1823307?needAccess=true&role=button (accessed on 15 February 2023). [CrossRef]
57. Clemente, F.M.; Afonso, J.; Sarmento, H. Small-sided games: An umbrella review of systematic reviews and meta-analyses. *PLoS ONE* **2021**, *16*, e0247067. Available online: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0247067 (accessed on 2 May 2023). [CrossRef]
58. Sánchez-Sánchez, J.; Raya-González, J.; Castillo, D.; Ramírez-Campillo, R.; Sánchez, M.; Rodríguez-Fernández, A.; Nakamura, F.Y. Influence of scoring methods and numerical superiority on physical demands in elite young soccer players. *Eur. J. Hum. Mov.* **2021**, *46*, 75–84. Available online: http://eurjhm.com/index.php/eurjhm/article/view/616/713 (accessed on 10 February 2023). [CrossRef]
59. Hill-Haas, S.V.; Coutts, A.J.; Dawson, B.T.; Rowsell, G.J. Time-motion characteristics and physiological responses of small-sided games in elite Youth players: The influence of player number and rule changes. *J. Strenght Cond. Res.* **2010**, *24*, 2149–2156. [CrossRef]
60. Praça, G.M.; Folgado, H.; Andrade, A.G.; Greco, P.J. Influence of additional players on collective tactical behavior in small-sided soccer games. *Rev. Bras. Cineantropom. Hum.* **2016**, *18*, 62–71. Available online: https://www.scielo.br/j/rbcdh/a/P94d59XPYJNPSWhy6Vdkbrp/?lang=en (accessed on 10 February 2023). [CrossRef]
61. Sampaio, J.E.; Lago, C.; Gonçalves, B.; Maçãs, N.L. Effects of pacing, status and unbalance in time motion variables, heart rate and tactical behaviour when playing 5-a-side football small-sided games. *J. Sci. Med. Sport* **2014**, *17*, 229–233. Available online: https://www.sciencedirect.com/science/article/pii/S1440244013000923?via%3Dihub (accessed on 14 February 2023). [CrossRef]
62. Guard, A.; Mcmillan, K.; Macfarlane, N. Influence of game format and team strategy on physical and perceptual intensity in soccer small-sided games. *Int. J. Sports Sci. Coach.* **2022**, *17*, 1109–1118. Available online: https://eprints.gla.ac.uk/257271/1/257271.pdf (accessed on 13 February 2023). [CrossRef]
63. Lemes, J.C.; Luchesi, M.; Diniz, L.B.; Bredt, S.G.; Chagas, M.H.; Praça, G.M. Influence of pitch size and age category on the physical and physiological responses of young football players during small-sided games using GPS devices. *Res. Sports Med.* **2020**, *28*, 206–216. Available online: https://www.tandfonline.com/doi/full/10.1080/15438627.2019.1643349 (accessed on 13 February 2023). [CrossRef] [PubMed]
64. Nunes, N.A.; Gonçalves, B.; Coutinho, D.; Travassos, B. How Numerical Unbalance Constraints Physical and Tactical Individual Demands of Ball Possession Small-Sided Soccer Games. *Front. Psychol.* **2020**, *11*, 1464. Available online: https://www.frontiersin.org/articles/10.3389/fpsyg.2020.01464/full (accessed on 12 May 2023). [CrossRef] [PubMed]
65. Torres-Ronda, L.; Gonçalves, B.; Marcelino, R.; Torrents, C.; Vicente, E.; Sampaio, J. Heart rate, time-motion, and body impacts when changhing the number of teammates and opponents in soccer small-sided games. *J. Strength Cond.* **2015**, *29*, 2723–2730. Available online: https://journals.lww.com/nsca-jscr/Fulltext/2015/10000/Heart_Rate,_Time_Motion,_and_Body_Impacts_When.6.aspx (accessed on 24 May 2023). [CrossRef]
66. Bekris, E.; Gissis, I.; Sambanis, M.; Sarakinos, A.; Anagnostakos, K. The physiological and technical-tactical efects of an additional soccer player's participation in small sided games training. *Phys. Train* **2012**. Available online: http://ikee.lib.auth.gr/record/274839/files/Physiological%20and%20Technical.pdf (accessed on 19 May 2023).
67. Jastrzebski, Z.; Radziminski, L.; Stepien, P. Comparison of analysis of time movement and physiological responses during reduced games in male and female soccer players. *Balt. J. Health Phys. Act.* **2016**, *8*, 42–50. Available online: https://www.balticsportscience.com/cgi/viewcontent.cgi?article=1531&context=journal (accessed on 10 February 2023). [CrossRef]
68. Canton, A.; Torrents, C.; Ric, A.; Goncalves, B.; Sampaio, J.; Hristovski, R. Effects of temporary numerical imbalances on collective exploratory behavior of young and professional football players. *Front. Psychol.* **2019**, *10*, 1968. Available online: https://www.frontiersin.org/articles/10.3389/fpsyg.2019.01968/full (accessed on 15 February 2023). [CrossRef]
69. Praça, G.M.; Greco, J.M. *Treinamento Tático no Futebol: Teoria e Prática*; Appris: Curitiba, Brasil, 2020.
70. Bradley, P.S.; Dellal, A.; Mohr, M.; Castellano, J.; Wilkie, A. Gender differences in match performance characteristics of soccer players competing in the UEFA Champions League. *Hum. Mov. Sci.* **2013**, *33*, 159–171. [CrossRef]
71. Mujika, I.; Santisban, J.; Impellizzeri, F.M.; Castagna, C. Fitness determinants of success in men's and women's football. *J. Sport Sci.* **2009**, *27*, 107–114. Available online: https://www.tandfonline.com/doi/full/10.1080/02640410802428071 (accessed on 14 February 2023). [CrossRef]
72. Manson, S.A.; Brughelli, M.; Harris, N.K. Physiological Characteristics of International Female Soccer Players. *J. Strength Cond.* **2014**, *28*, 308–318. Available online: https://journals.lww.com/nsca-jscr/Fulltext/2014/02000/Physiological_Characteristics_of_International.3.aspx (accessed on 12 February 2023). [CrossRef]

73. Jong, L.M.; Gastin, P.B.; Angelova, M.; Bruce, L.; Dwyer, D.B. Technical determinants of success in professional women's football: A wider range of variables reveals new insights. *PLoS ONE* **2020**, *15*, E0240992. Available online: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0240992 (accessed on 10 February 2023).
74. Tenga, A.; Zubillaga, O.C.; Fradua, L. Explorative Study on Patterns of Game Structure in Male and Female Matches from Elite Spanish Soccer. *Int. J. Perform. Anal. Sport* **2015**, *15*, 411–423. Available online: https://www.tandfonline.com/doi/epdf/10.1080/24748668.2015.11868802?needAccess=true&role=button (accessed on 21 May 2023). [CrossRef]