The effect of small-sided game formats on physical and technical performance in wheelchair basketball

Original Investigation

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1 Abstract

2 Purpose: To examine effects of different small-sided games (SSG) on physical and technical 3 aspects of performance in wheelchair basketball (WB) players. Design: Observational cohort 4 study. Methods: Fifteen highly trained WB players participated in a single 5v5 (24-sec shot-5 clock) match and three 3v3 SSGs (18-sec shot-clock) on a: i) full (FC); ii) half (HC) and; iii) 6 modified length court (MOD). During all formats, player's activity profiles were monitored 7 using an indoor tracking system and inertial measurement units. Physiological responses were 8 monitored via heart rate and rating of perceived exertion. Technical performance i.e. ball 9 handling was monitored using video analysis. Repeated measures ANOVA and effect sizes 10 (ES) were calculated to determine the statistical significance and magnitude of any 11 differences between game formats. *Results:* Players covered less distance and reached lower peak speeds during HC ($P \le 0.0005$; ES \ge very large) compared to all other formats. Greater 12 13 distances were covered and more time was spent performing moderate and high speed 14 activity ($P \le 0.008$; ES \ge moderate) during FC compared to all other formats. Game format 15 had little bearing on physiological responses and the only differences in technical 16 performance observed were in relation to 5v5. Players spent more time in possession, took 17 more shots and performed more rebounds in all 3v3 formats compared to 5v5 ($P \le 0.028$; ES 18 \geq moderate). *Conclusions:* Court dimensions affect the activity profiles of WB players 19 during 3v3 SSG, yet had little bearing on technical performance when time pressures (shot-20 clocks) were constant. These findings have important implications for coaches to understand 21 which SSG format may be most suitable for physically and technically preparing WB players.

22 Keywords: Activity profiles, physiological demand, video analysis, wheelchair athletes,23 disability sport

24

25 Introduction

26 Wheelchair basketball (WB) is a 5v5 team sport characterised as an intermittent, 27 aerobic-based activity interspersed with frequent bouts of high-intensity work that requires high levels of physical conditioning and technical skill.^{1,2} A substantial amount of research 28 has explored the activity profiles,^{1,3,4} physiological^{2,5,6} and technical demands⁷⁻⁹ of 5v5 WB, 29 yet little has focused on training strategies that may best prepare athletes for the demands of 30 WB.^{6,10,11} Small-sided games (SSG) have emerged as one of the most common training 31 32 strategies employed by coaches from team sports, since they have the ability to develop 33 physical, technical and tactical competencies under competition-specific conditions and can also be used when athlete availability is limited.¹² A limited number of studies have explored 34 the effects of SSG in WB.^{6,10,11} However these studies have only considered the physiological 35 36 effects of SSG with limited reference to 5v5 WB. Subsequently, the impact of SSG upon the 37 activity profiles and technical demands of WB players have yet to be explored. The aforementioned studies have all focused on 4v4 game formats, whereas 3v3 is the more 38 common SSG format within WB, which has its own set of rules and regulations,¹³ with a 39 40 variety of formats played worldwide on different court dimensions. These include a: i) full 41 court (FC) [28 x 15 m]; ii) half court (HC) [14 x 15 m]; iii) modified court (MOD) [22 x 15 42 m].

Substantial research has explored the physical and technical responses to different court dimensions during able-bodied (AB) 3v3 basketball.¹⁴⁻¹⁶ Increased activity profiles and physiological responses were observed during 3v3 on a full court,¹⁶ whereas the frequency of technical actions performed increased on a half court.^{14,15} However, the effects of different SSG formats on physical and technical aspects of performance specific to WB remain unknown. Subsequently the aims of the current study were to compare the activity profiles, physiological and technical demands during three formats of 3v3 WB (FC, HC, MOD) in relation to 5v5 WB. It was hypothesised that the physical and technical demands would be inversely related during 3v3 WB, with an elevated physical demand during FC and improved technical performance during HC. The findings from this study will provide coaches with a better understanding of the effects of different SSG in WB and may be used to optimise physical and technical training strategies.

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56 Methods

57 Fifteen U22 international male wheelchair basketball players (age: 19 ± 2 years; 58 playing experience: 7 ± 3 years; classification range: 1.0 - 4.5) participated in the current 59 study. Ethical approval for the procedures was acquired from the University's local ethical 60 advisory committee and written informed consent was obtained from all players prior to 61 participation. All players participated in four different WB game formats over two days. On 62 day one players competed in a standard 5v5 match, composed of 4 x 10-minute periods with a 24-second shot-clock, a 14-point classification limit and substitutions permitted.¹³ Mean 63 64 playing time for all players during 5v5 was $20:23 \pm 06:53$ minutes (range: 11:04 - 30:2565 minutes). The following day players participated in three different formats of 3v3 on a: i) full 66 court (FC); ii) half court (HC); iii) 22m length court (MOD). All participants were equally 67 inexperienced with all 3v3 formats. Coaches selected 5 balanced teams of 3 players with an 8.5-point classification limit. All teams played 2 x 10-minute periods (to most closely 68 69 replicate the mean playing time of 5v5) of each format against different teams using a 70 running game-clock and an 18-second shot-clock. No substitutions or timeouts were 71 permitted during the 3v3 game formats, which were scored and officiated. A minimum of 10-72 minutes rest was ensured between each game to prevent fatigue from influencing 73 performance. Teams and opponents were identical across all 3v3 game formats.

74 During all formats, players' activity profiles were monitored using a radio frequencybased indoor tracking system sampling at ~ 8 Hz (Ubisense, Cambridge, UK), which has 75 previously been validated for use within wheelchair court sports.^{17,18} Data collection 76 77 commenced at the beginning of each period and terminated at the end of each period and was 78 only paused during the 5v5 format during any extended stoppages (e.g. timeouts, equipment 79 calls). Since a running clock was used and no timeouts were permitted during the 3v3 formats, 80 data collection was only paused in the event of an equipment call. The activity accumulated 81 during all periods of each format was analysed to determine the relative distance covered $(m \cdot min^{-1})$, peak speed $(m \cdot s^{-1})$ and the relative time spent in 3 arbitrary speed zones: i) low 82 speed activity (LSA) $< 1.5 \text{ m}\cdot\text{s}^{-1}$; ii) moderate speed activity (MSA) 1.5-3.0 m·s⁻¹; iii) high 83 speed activity (HSA) $> 3.0 \text{ m}\cdot\text{s}^{-1}$. Inertial measurement units (IMU) (Shimmer3, Shimmer 84 85 Sensing, Ireland) sampling at 199.8 Hz were attached to the frame of five randomly selected 86 players spanning the range of classifications (1.0, 2.0, 3.0, 3.5 & 4.5) to determine the 87 magnitude of frame rotations and accelerations during each game format. All IMU data was filtered using a 2nd order low-pass Butterworth filter with a cut-off frequency of 25Hz. These 88 89 sensors have been previously used with wheelchair sports over extended periods and have 90 been shown not drift over these periods.⁴ The number of rotations (n·min⁻¹) performed were 91 categorised as: i) minor $< 15^{\circ}$; moderate 15-165°; severe $>165^{\circ}$. Accelerations were 92 quantified as the relative movement time spent in 3 arbitrary zones: i) low acceleration activity (LAA) < 1.0 m·s²; ii) moderate acceleration activity (MAA) 1.0-2.5 m·s²; iii) high 93 acceleration activity (HAA) > $2.5 \text{ m} \cdot \text{s}^2$. 94

Heart rate was monitored wirelessly at 1-second intervals (Polar Team Pro System,
Polar, Kempele, Finland) during all formats. Peak (HR_{peak}) and mean heart rate (HR_{mean}) were
reported for all players and was paused during any breaks in play to align with the tracking
data. Immediately after each game format players provided an overall rating of perceived

exertion (RPE) using the CR-10 scale.¹⁹ Players were familiar with the CR-10 scale and its
anchors, as it formed a regular part of their training.

101 All game formats were recorded using 2 synchronised video cameras (Sony HDR-102 CX405, Tokyo, Japan) equipped with a wide angle conversion lens (Raynox HD-5050PRO, 103 Tokyo, Japan) and positioned along both baselines. Each camera focused on one half of the 104 court, with a slight overlap to ensure that activities were visible anywhere on court. Video 105 footage was analysed using Dartfish TeamPro Data 6.0 (Fribourg, Switzerland) by two 106 analysts experienced with the software and WB. A number of sport-specific activities were 107 coded for all individuals including possession (time in possession), balls received (number of 108 times a player receives a ball), balls caught (balls caught relative to balls received), passes 109 (number of passes made), long passes (long passes defined as a pass that bisects one or more 110 opponents, made relative to total passes), pass success rate (% of successful passes), shots 111 (number of shots made), three-pointers (number of shots made behind the three-point line), 112 shot success rate (% of successful shots), rebounds (number of defensive and offensive 113 rebounds made), forced turnovers (number of times a player forced a mistake from an 114 opponent) and turnovers (number of times a player turned possession over through an error). 115 To account for differences in playing time between 5v5 and 3v3 formats, resulting from 116 differences in timing (game-clock vs running clock) and rules relating to substitutions and 117 timeouts, technical activities were only analysed when the ball was in play across all formats. 118 Subsequently frequency-based technical actions were expressed as the number of times an 119 activity was performed relative to a fixed time (10-minutes). Each analyst re-coded the 120 activities of two randomly selected 10-minute periods for two players so that intra- and inter-121 rater reliability could be determined. Intraclass correlation coefficients ≥ 0.96 and ≥ 0.87 122 were observed for intra- and inter-observer reliability respectively across all variables, which were deemed acceptable based on a similar analyses with WB.⁹ 123

All data were presented as means \pm standard deviation (SD). Repeated measures analysis of variance (ANOVA) with a bonferroni correction was performed on all parameters, except data from the inertial measurement units due to a limited sample size (n = 5). Statistical significance was accepted when P < 0.05. Cohen's effect sizes (ES) \pm 90% CI was calculated to determine the magnitude of any differences in dependent variables between game formats²⁰ and were categorised as trivial (< 0.2), small (0.2 – 0.6), moderate (0.6 – 1.2), large (1.2 – 2.0) and very large (> 2.0).²¹

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132 Results

133 Players covered significantly greater distance during FC ($P \le 0.0005$; ES \ge large) and 134 reached greater peak speeds during 5v5 ($P \le 0.020$; ES \ge moderate) compared to all other 135 formats (Table 1 & 2). Distance covered and peak speeds were significantly lower during HC 136 $(P \le 0.0005; \text{ES} \ge \text{very large})$ compared to all other formats. More time was spent performing 137 MSA and HSA (P < 0.008; ES > moderate) and less time performing LSA (P < 0.0005; ES > 138 large) during FC compared to all other formats. Alternatively, more time was spent 139 performing LSA and less time performing MSA and HSA during HC compared to all formats 140 $(P \le 0.0005; \text{ES} \ge \text{very large})$. More time was spent performing MAA during FC and MOD 141 compared to 5v5 and more severe rotations were performed during HC compared to 5v5 and 142 FC (ES \geq large).

Despite the changes in activity profiles, game format had little bearing on physiological responses (Table 1 & 2). HR_{peak} was significantly higher during 5v5 compared to HC (P = 0.025; ES – moderate), whereas HR_{mean} was significantly elevated during FC in relation to HC (P = 0.001; ES – moderate). Players also reported a higher RPE during 5v5 and FC compared to HC and MOD ($P \le 0.048$; ES – moderate).

148	No significant or meaningful differences in technical performance were revealed
149	between any of the 3v3 game formats. The only differences in technical performance
150	observed were in relation to 5v5 (Table 3). Players spent more time in possession, took more
151	shots and performed more rebounds in all 3v3 formats compared to 5v5 ($P \le 0.028$ ES \ge
152	moderate). Players received the ball more often and made more passes during FC and MOD
153	and forced more turnovers during HC compared to 5v5 ($P \le 0.045$; ES \ge moderate).
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155	INSERT TABLE 1, 2 & 3 HERE
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The current study was the first to explore both the physical and technical demands of 3v3 SSG in WB and to compare these demands to 5v5 competition. The findings provide important information about the use of SSG in WB to help coaches optimise physical and technical training strategies. The main findings were that 3v3 SSG variations had a substantial effect on the activity profiles of WB players, yet minimal changes in both physiological responses and technical performance were observed. In fact, technical performance only differed between 3v3 and 5v5 formats and not within 3v3 formats.

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Discussion

Activity profiles were elevated during FC in relation to all other formats. Although peak speed was lower than what was observed during 5v5, the relative distance covered was far greater and players spent less time performing LSA and more time performing MSA and HSA during FC compared to all other formats. Elevated activity profiles were likely attributed to the greater court ratio per player enabled during FC (70 m²), which has been observed during SSG in AB sports^{16,22,23} and more relatedly, wheelchair rugby.²⁴ Despite the 171 increased external demands imposed upon players during FC, internal demands did not 172 necessarily follow the same trend with mixed physiological responses revealed. No 173 meaningful differences in either HR_{peak} or HR_{mean} were revealed between FC and other 174 formats, although subjectively players perceived FC to be more demanding than both HC and 175 MOD, yet similar to 5v5. In addition, the increased activity profiles did not negatively effect 176 players' technical performance during 3v3 FC as had been observed during AB basketball.^{14,15} Subsequently, in line with the rules adopted by the current study (no 177 178 substitutions/timeouts, 18-second shot-clock) 3v3 FC could be a favourable SSG for coaches 179 to implement to physically overload players, without impairing technical performance.

180 In contrast to FC, the reduced court ratio per player associated with HC (35 m^2) led to 181 a reduction in activity profiles, with less distance covered, lower peak speeds reached and 182 more time spent performing LSA and less time performing MSA and HSA compared to all 183 other formats. This corresponds with what has previously been observed during AB 184 basketball, whereby a reduction in external load was revealed during 3v3 matches on a half court compared to both 3v3 and 5v5 on a full court.¹⁶ Alternatively players did perform more 185 186 severe rotations during HC compared to 5v5 and FC, which was a strategy likely employed to 187 create space on the smaller court. Although the execution of these rotations is likely 188 associated with an increased metabolic power, this was not sufficient enough to offset the 189 other activity profiles that were diminished during HC, as physiologically this format was 190 also less demanding. Despite the reduced external and internal demands of HC, minimal 191 benefits in technical performance were revealed. Improvements in the frequency of certain 192 technical activities were only observed in relation to 5v5 and not versus other 3v3 formats, which has been observed in AB basketball.¹⁵ The only additional value to HC from a 193 194 technical perspective was that players forced moderately more turnovers compared to both 195 5v5 and FC. Therefore, although HC may not be an advisable SSG format for coaches

wishing to improve WB players physical and ball handling capabilities using the regulations
adopted by the current study, this format may still be beneficial for developing players
defensive competencies.

199 During MOD activity profiles were all lower in relation to FC, yet higher in relation 200 to HC, which could again be associated to the changes in court ratio per player, with MOD 201 (55 m^2) eliciting more court space per player than HC and less than FC. Unlike other $3v_3$ 202 formats, MOD appeared to offer the closest representation of the activity profiles observed 203 during 5v5 WB. In particular, the distances covered and the time spent performing MSA were similar between MOD ($85.1 \pm 4.5 \text{ m} \cdot \text{min}^{-1}$; $36.7 \pm 4.2\%$) and 5v5 ($87.4 \text{ m} \cdot \text{min}^{-1}$; $38.4 \pm 4.1\%$) 204 205 respectively, with only small effects reported (Table 2). Similarly, physiological responses 206 were reflective of 5v5 WB, with no meaningful differences in HR measures observed and 207 although players RPE was moderately lower for MOD, 90% CI spanned zero. As with other 208 3v3 formats, MOD only demonstrated meaningful increases in the frequency of technical 209 activities in relation to 5v5 as opposed to other SSGs. Subsequently, MOD may be an 210 advisable SSG format to implement when coaches are trying to maintain player's physical 211 conditioning without overloading them or during training phases when skill development is 212 valued above physical conditioning. Despite these advantages, MOD may be limited from a 213 logistical perspective, since court dimensions, lines and baskets need repositioning from their 214 standard positions.

The current study has demonstrated that different variations of SSGs can be implemented to affect the physical demands of WB training, which has been largely attributed to the different court ratios per player across each format. However, since technical measures of performance only varied between 5v5 and SSGs, it would suggest that additional parameters other than court ratio per player may affect technical performance during SSGs. Other than a reduction in player numbers, the key difference between 5v5 and SSG formats 221 was a reduction in shot-clock from 24- to 18-seconds. Shot-clocks were controlled across all 222 SSGs during the current study to minimise the number of confounding factors that could 223 influence the results. However, shot-clock duration could be a key parameter for future SSG 224 research in WB to consider in order to further affect players physical and technical performance. Rhodes et al.²⁴ revealed substantial increases in the activity profiles of 225 226 wheelchair rugby players when shot-clock duration was reduced during 3v3 SSGs. Although 227 this study failed to account for any effects on technical performance, a reduction in shot-228 clock duration may place further emphasis on technical skill development, especially within 229 the confined court space of HC. Larger sample sizes would also be preferable in future so that 230 distinctions could be made between athletes of different classification and to ensure that the 231 effects of SSG formats on performance are similar for all classes. The current study 232 accounted for this to an extent by reducing the maximum classification limit from 14- (5v5) 233 to 8.5-points (3v3) to prevent the more impaired (lower classification) players from being 234 excluded. A larger sample size would have also been favourable for the IMU data, where it was only possible to monitor five players. Subsequently few meaningful effects were 235 236 observed for the rotation and acceleration data between game formats. However, the methods 237 adopted for collecting and analysing this data was novel and may lay the foundations for 238 future studies to develop when quantifying mobility performance in wheelchair sports. 239 Minimal changes in physiological demand were also observed between game formats despite 240 clear changes in activity profiles, which may be a limitation of the HR-based methods used. Previous studies have reported similar findings during SSG,^{23,25} which could be attributed to 241 242 the large individual variability in HR observed for players. It could also be due to the 243 intermittent nature of WB, where frequent high-intensity efforts are performed, which could lead to an underestimation of HR.²⁵ Subsequently, future investigations may benefit from the 244

use of blood lactate measurements to assess the physiological demands of SSG, as Kennet et
 al.²⁴ revealed less individual variability within this measure during intermittent team sports.

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248 Practical Applications

- Coaches would benefit from implementing 3v3 SSG on a full court, when the principal
 objective of training is to physically overload WB players, whilst maintaining sports specificity.
- 3v3 SSG on a modified length court could be implemented by coaching staff to maintain
 physical fitness levels specific to the demands of competition, since this format shared
 the most physical similarities to 5v5 WB.
- The only additional benefit of 3v3 on half a court was that players performed more
 severe rotations and forced more turnovers in relation to other SSGs. Therefore, in its
 current format HC could be recommended to improve wheelchair handling skills and
 defensive aspects of WB performance.

Modifying court dimensions and subsequently the court ratio per player seemed to have a
 clear effect on activity profiles during WB. However, only a reduction in player number
 from 5v5 to 3v3 impacted upon players technical skills. In order to manipulate technical
 performance within 3v3 SSG, further modifications to shot-clock durations are advised.

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264 Conclusions

Modifying the court dimensions of 3v3 SSGs directly influences the activity profiles and physiological responses of highly trained WB players, which can be elevated during FC and reduced during HC, mainly as a result of the different court ratios per player. Alternatively, court dimensions had less of an impact upon technical performance during SSGs, as the majority of meaningful differences existed between all 3v3 formats and 5v5. Subsequently, a reduction in player number and differences in shot-clock restrictions likely contribute to differences in technical performance. These findings have important implications for WB coaches with regards to which SSG format may be best implemented at various stages of the season.

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	5v5		3v3	
		FC	НС	MOD
Activity profiles				
Relative distance (m·min ⁻¹)	87.4 (4.1)	97.5 (6.1)	68.6 (5.7)	85.1 (4.5)
Peak speed $(m \cdot s^{-1})$	4.69 (0.31)	4.36 (0.31)	3.33 (0.30)	4.13 (0.35)
LSA (% time)	56.4 (3.8)	49.7 (5.4)	73.8 (5.8)	59.7 (4.1)
MSA (% time)	38.4 (4.1)	42.5 (5.1)	25.7 (5.8)	36.7 (4.2)
HSA (% time)	5.1 (1.4)	7.6 (2.7)	0.3 (0.3)	3.4 (1.5)
LAA (% time)	62.7 (3.4)	55.0 (4.7)	59.5 (4.5)	56.5 (5.0)
MAA (% time)	23.0 (0.8)	26.2 (2.1)	25.0 (1.7)	25.5 (1.8)
HAA (% time)	14.2 (3.4)	18.8 (3.0)	15.4 (3.1)	18.0 (3.3)
Minor rotations $(n \cdot min^{-1})$	31.5 (6.6)	31.3 (6.0)	24.9 (3.6)	28.4 (4.3)
Moderate rotations (n·min ⁻¹)	25.6 (2.2)	27.3 (3.5)	25.6 (4.1)	27.2 (5.0)
Severe rotations $(n \cdot min^{-1})$	5.4 (1.0)	5.2 (0.5)	6.9 (0.5)	6.0 (0.8)
Physiology				
HR _{peak} (beats·min ⁻¹)	183 (11)	178 (15)	173 (10)	181 (13)
HR _{mean} (beats·min ⁻¹)	152 (11)	155 (14)	146 (12)	152 (15)
RPE (AU)	5.4 (1.1)	5.5 (1.2)	4.4 (1.1)	4.4 (1.4)
Technical				
Possession (s)	46.3 (30.2)	76.9 (38.8)	81.0 (42.1)	69.9 (32.5)
Balls received (n/10-min)	10.1 (4.7)	13.4 (4.5)	12.2 (4.4)	14.0 (4.5)
Balls caught (%)	97.9 (5.9)	97.4 (4.7)	96.4 (3.9)	97.6 (3.2)
Passes (n/10-min)	9.9 (4.4)	14.4 (4.6)	12.0 (3.6)	14.1 (4.4)
Long passes (%)	37.1 (21.8)	39.0 (15.7)	47.6 (18.8)	41.4 (16.9)
Pass success rate (%)	96.8 (4.8)	95.2 (4.6)	93.6 (6.7)	96.4 (5.8)
Shots (n/10-min)	3.7 (2.4)	6.2 (2.8)	6.8 (3.5)	7.2 (3.3)
Three pointers (n/10-min)	0.2(0.4)	0.6 (0.9)	0.3 (0.7)	0.3 (0.7)
Shot success rate (%)	52.8 (24.7)	40.7 (19.6)	37.3 (20.0)	42.3 (17.6)
Rebounds (n/10-min)	1.6 (1.2)	2.7 (1.7)	3.5 (1.9)	3.4 (2.1)
Forced turnovers (n/10-min)	0.3 (0.4)	0.4 (0.4)	1.0 (1.1)	0.8 (0.9)
Turnovers (n/10-min)	0.2 (0.5)	0.2 (0.3)	0.4 (0.4)	0.4 (0.7)

Table 1 Mean (SD) performance measures during each of the game formats

	ANOVA	5 v 5 vs. FC	5 v 5 vs. HC	5 v 5 vs. MOD	FC vs. HC	FC vs. MOD	HC vs. MOD
Activity profiles							
Deletizza distance	<0.0005	2 0**	2 0**	0.5	4.0**	∩ ∩ **	2 0**
Relative distance	<0.0003	2.0	$\begin{array}{c} 5.8 \\ (2.4, 5.2) \end{array}$	0.3	4.9	(1, 2, 2, 4)	3.2
D 1 1	<0.0005	(0.9, 3.0)	(2.4, 5.2)	(-0.3, 1.4)	(3.2, 0.0)	(1.2, 3.4)	(1.9, 4.5)
Peak speed	<0.0005		4.5	1.7	3.4	0.7	2.5
TOA	<0.000 <i>5</i>	(0.2, 2.0)	(2.9, 6.0)	(0.7, 2.7)	(2.1, 4.7)	(-0.2, 1.6)	(1.3, 3.6)
LSA	< 0.0005	1.4	3.6	0.8	4.3	2.0	2.8
		(0.5, 2.4)	(2.2, 4.9)	(-0.1, 1./)	(2.8, 5.9)	(1.0, 3.1)	(1.6, 4.0)
MSA	< 0.0005	0.9	2.5	0.4	3.1	1.2	2.2
		(0, 1.8)	(1.4, 3.7)	(-0.5, 1.3)	(1.8, 4.3)	(0.3, 2.2)	(1.1, 3.2)
HSA	< 0.0005	1.2	4.7	1.2	3.8	1.9	2.9
		(0.2, 2.1)	(3.1, 6.4)	(0.3, 2.1)	(2.4, 5.2)	(0.9, 3.0)	(1.7, 4.1)
LAA	-	1.9	0.8	1.5	1.1	0.3	0.6
		(0.1, 3.6)	(-0.7, 2.3)	(-0.2, 3.1)	(-0.5, 2.7)	(-1.2, 1.8)	(-0.9, 2.1)
MAA	-	2.0	1.5	1.8	0.6	0.4	0.3
		(0.2, 3.8)	(-0.2, 3.2)	(0.1, 3.5)	(-0.9, 2.1)	(-1.1, 1.8)	(-1.2, 1.8)
HAA	-	1.4	0.4	1.1	1.1	0.3	0.8
		(-0.2, 3.1)	(-1.1, 1.9)	(-0.5, 2.7)	(-0.5, 2.7)	(-1.2, 1.7)	(-0.7, 2.3)
Minor rotations	-	0.0	1.2	0.6	1.3	0.6	0.9
		(-1.4, 1.5)	(-0.4, 2.9)	(-0.9, 2.1)	(-0.3, 2.9)	(-0.9, 2.9)	(-0.7, 2.4)
Moderate rotations	-	0.6	0	0.4	0.5	0	0.4
		(-0.9, 2.1)	(-1.4, 1.5)	(-1.1, 1.9)	(-1.0, 1.9)	(-1.4, 1.5)	(-1.1, 1.8)
Severe rotations	-	0.3	1.9	0.7	3.4	1.2	1.3
		(-1.2, 1.7)	(0.1, 3.7)	(-0.8, 2.2)	(1.1, 5.7)	(-0.4, 2.8)	(-0.3, 3.0)
Physiology							
HR	0.016	0.4	1.0*	0.2	0.4	0.2	0.7
Пиреак	0.010	(05, 1, 2)	$(0 \ 1 \ 1 \ 0)$	(0.2)	(05, 13)	(0.2)	(0, 2, 1, 6)
ЦD	0.033	(-0.3, 1.2)	(0.1, 1.9)	(-0.7, 1.0)	(-0.3, 1.3) 0 7^{**}	(-0.0, 1.1)	(-0.2, 1.0)
111\mean	0.035	(0.6, 1, 1)	(0.3)		(0, 2, 1, 6)	(0.2)	(0.4)
DDE	<0.0005	(-0.0, 1.1)	(-0.3, 1.4)	(-0.9, 0.9)	(-0.2, 1.0)	(-0.7, 1.1)	(-0.4, 1.3)
N L	<0.0003		(0, 1, 0)	(0.1, 1, 7)	1.0	(0, 1, 7)	
		(-0.8, 0.9)	(0, 1.8)	(-0.1, 1./)	(0, 1.9)	(0, 1.7)	(-0.9, 0.9)

Table 2 Differences in physical performance between game formats [ES (\pm 90% CI)].

Key: - no statistical analysis performed due to small sample size (n = 5); denotes a statistically significant difference at * P < 0.05; ** P < 0.01.

	ANOVA	5 v 5 vs. FC	5 v 5 vs. HC	5 v 5 vs. MOD	FC vs. HC	FC vs. MOD	HC vs. MOD
Possessions	< 0.0005	0.9^{**}	1.0^{**}	0.8^{*}	0.1	0.2	0.3
		(0, 1.8)	(0.1, 1.8)	(-0.1, 1.6)	(-0.8, 1.0)	(-0.7, 1.1)	(-0.6, 1.2)
Balls received	0.008	0.7^{*}	0.5	0.9^*	0.3	0.1	0.4
		(-0.2, 1.6)	(-0.4, 1.3)	(0, 1.7)	(-0.6, 1.1)	(-0.7, 1.0)	(-0.5, 1.3)
Balls caught	0.830	0.1	0.3	0.1	0.2	0.1	0.3
		(-0.8, 0.9)	(-0.6, 1.2)	(-0.8, 0.9)	(-0.6, 1.1)	(-0.8, 0.9)	(-0.5, 1.2)
Passes	< 0.0005	1.0^*	0.5	1.0^{*}	0.6	0.1	0.6
		(0.1, 1.9)	(-0.3, 1.4)	(0.1, 1.9)	(-0.3, 1.5)	(-0.8, 0.9)	(-0.3, 1.5)
Long passes	0.067	0.1	0.5	0.2	0.5	0.2	0.4
		(-0.8, 1.0)	(-0.4, 1.4)	(-0.6, 1.1)	(-0.4, 1.4)	(-0.7, 1.0)	(-0.5, 1.2)
Pass success rate	0.477	0.3	0.6	0.1	0.3	0.2	0.5
		(-0.5, 1.2)	(-0.3, 1.4)	(-0.8, 0.9)	(-0.6, 1.1)	(-0.6, 1.1)	(-0.4, 1.3)
Shots	< 0.0005	1.0^{**}	1.0^{**}	1.2^{**}	0.2	0.3	0.1
		(0.1, 1.9)	(0.1, 1.9)	(0.3, 2.1)	(-0.7, 1.0)	(-0.5, 1.2)	(-0.7, 1.0)
Three pointers	0.137	0.6	0.2	0.2	0.4	0.4	0
		(-0.3, 1.4)	(-0.7, 1.0)	(-0.7, 1.0)	(-0.5, 1.2)	(-0.5, 1.2)	(-0.9, 0.9)
Shot success rate	0.139	0.5	0.7	0.5	0.2	0.1	0.3
		(-0.3, 1.4)	(-0.2, 1.6)	(-0.4, 1.4)	(-0.7, 1.0)	(-0.8, 0.9)	(-0.6, 1.1)
Rebounds	0.002	0.8^{*}	1.2**	1.1^{*}	0.4	0.4	0.1
		(-0.1, 1.6)	(0.3, 2.1)	(0.2, 2.0)	(-0.4, 1.3)	(-0.5, 1.2)	(-0.8, 1.0)
Forced turnovers	0.048	0.3	0.9^*	0.7	0.7	0.6	0.2
		(-0.6, 1.1)	(0, 1.7)	(-0.2, 1.6)	(-0.2, 1.6)	(-0.3, 1.4)	(-0.7, 1.1)
Turnovers	0.781	0	0.4	0.3	0.6	0.4	0
		(-0.9, 0.9)	(-0.4, 1.3)	(-0.5, 1.2)	(-0.3, 1.4)	(-0.5, 1.2)	(-0.9, 0.9)

Table 3 Differences in technical performance between game formats [ES (\pm 90% CI)].

Key: denotes a statistically significant difference at * P < 0.05; ** P < 0.01.