

Speed Qualities and Methodological Considerations in Gaelic Games: A Systematic Scoping Review



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Introduction

- In recent years, there has been a marked increase in research examining speed qualities in Gaelic Games; ladies and mens Gaelic football, hurling and camogie.
- The distribution of speed qualities examined across Gaelic games in addition to the monitoring methods utilised is yet to be examined.

Aims

- Conduct a systematic search of the literature and report speed qualities examined in Gaelic games;
- Report timing technologies, assessment procedures and extraneous factors used to assess speed qualities;
- Provide normative values for top speed

Methods

- Systematic searches of electronic databases were conducted following the PRISMA-ScR guidelines using search terms and keywords shown in Table 1.

Search term	Keyword
1. Sporting population	"Ladies Gaelic football" OR "Gaelic football" OR "Gaelic games" OR hurling OR hurlers OR camogie OR footballers NOT soccer
2. Speed qualities	"match demands" OR "game demands" OR "match play" OR "running performance" OR sprint* OR speed OR "repeated sprint ability" OR "activity profil*" OR "work rate" OR acceleration OR deceleration OR "change of direction" OR agility OR "activity pattern" OR "speed endurance" OR "sprint performance" OR "speed performance" OR "sprint tim*" OR "sprint velocity"
Search phrases:	1 AND 2*

Table 1 Keywords and search terms used in each database

- Studies were eligible for inclusion if a speed quality was assessed, results were provided, and participants were Gaelic games players ≥ 18 years (Table 2).
- Relevant methodological details and normative values were extracted from each study and subsequently reported in review.

Results

- Forty-two studies were included in the review, with 95% being conducted in men's Gaelic football (MGF) and hurling (Fig 1).

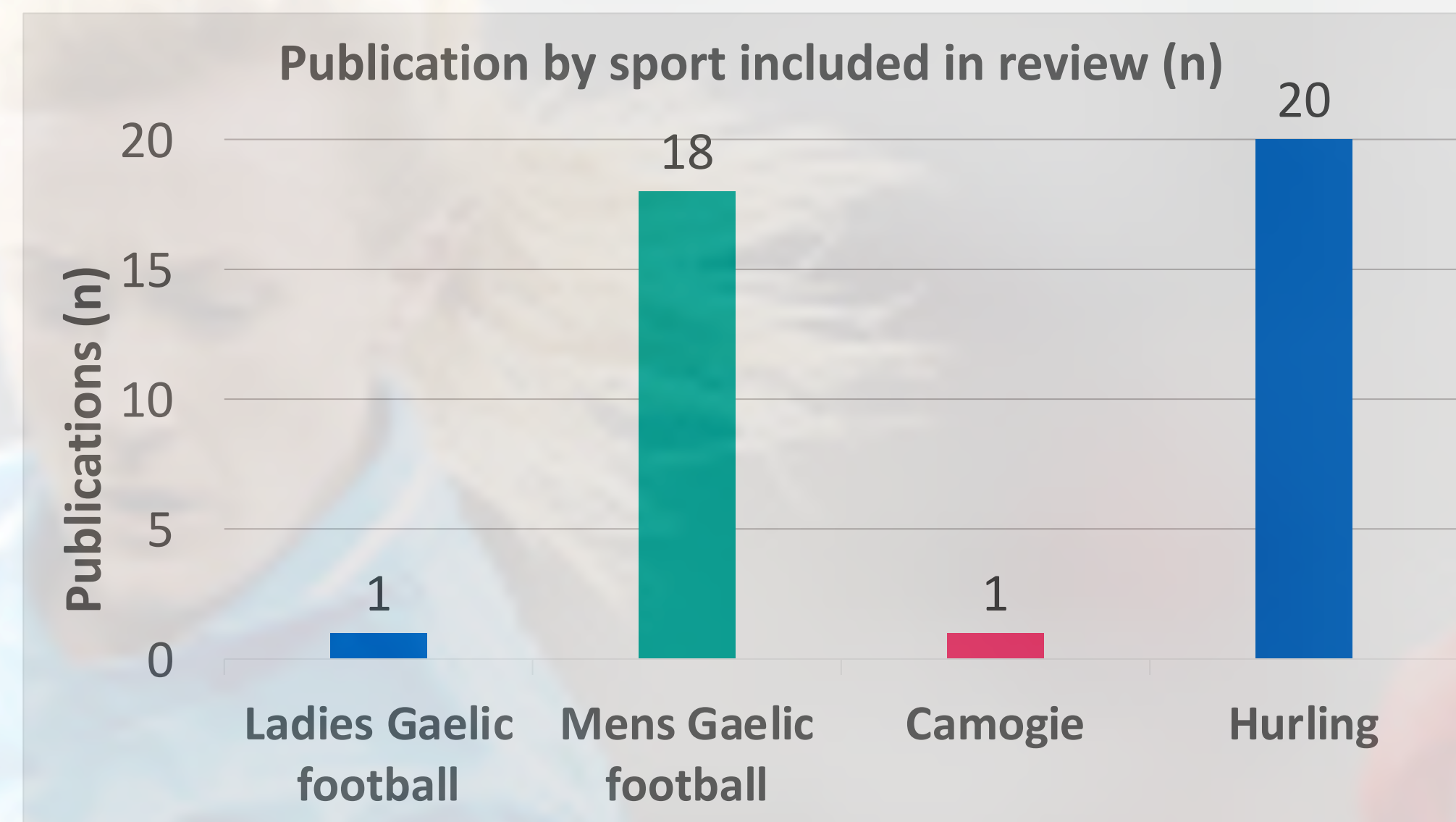


Fig 1 Publications (n) by sport included in review

- Linear sprint performance (LSP) and top speed accounted for 83% of all qualities assessed. Over 80% of LSP assessments utilised distances of 5 and 20 m, in MGF and hurling (Table 3).
- There was a considerable variety of methods used and a plethora of studies failed to report relevant methodological variables (Table 4).

Author	Year	Timing technology	Brand	Model	Data Collection				Data Processing	
					SF (Hz)	SAT (n)	HDOP (n)	Firmware version	MED (s)	Raw/software
Camogie										
Young et al. [3]	2020	GPS	STATSports	Apex	10	NR	NR	2.0.2.4	NR	STATSports, Apex
Hurling										
Collins et al. [4]	2018	GPS	VX Sport	NR	4	NR	NR	NR	NR	NR
Young et al. [42]	2020	GPS	STATSports	Viper	10	19 ± 7	1 ± 1	2.7.1.83	NR	STATSports Viper 1.2
Young et al. [43]	2020	GPS	STATSports	Viper	10	NR	NR	2.7.1.83	≥ 1.0	STATSports, Viper
Young et al. [44]	2019	GPS	STATSports	Viper	10	NR	NR	Viper 2.28	NR	Raw
Young et al. [2]	2019	GPS	STATSports	Viper	10	NR	NR	Viper	≥ 1.0	Raw

Table 2 GPS technologies used to assess top speed

- Results between studies should be compared with caution due to the different methods employed (Table 5).

Author	Year	Data files (n)	Playing standard	Top speed (km·h ⁻¹)	Top speed (m·s ⁻¹)
Camogie					
Young et al. [3]	2020	216	Senior Inter-county	24.9 ± 1.6	6.92 ± 0.44
Hurling					
Collins et al. [4]	2018	94	Senior Inter-county	29.6 ± 2.2	8.22 ± 0.61
Young et al. [42]	2020	206	Senior Inter-county	30.1 ± 1.8	8.36 ± 0.50
Young et al. [43]	2020	76	U17 Inter-county	28.1 ± 2.9	7.81 ± 0.81
Young et al. [45]	2018	192	Senior Inter-county	28.5 ± 0.8	7.92 ± 0.22
			Senior Club	28.3 ± 0.9	7.86 ± 0.25
Young et al. [46]	2018	95	U21 Inter-county	29.1 ± 1.9	8.08 ± 0.53
Young et al. [2]	2019	51	Senior Inter-county	31.5 ± 1.5*	8.75 ± 0.42
Men's Gaelic football					
Boyle et al. [49]	2020	52	Senior Inter-county	30.1 ± 1.3	8.36 ± 0.36

Table 3 Normative values for top speed by sport

Discussion

- MGF and hurling accounted for 95% of the studies included in the review; only 1 study assessed LGF and camogie athletes, respectively.
- LSP and top speed are the two speed qualities most assessed. No literature exists on other speed qualities such as deceleration.
- The variety of methods used to assess speed qualities and the failure to report key methodological variables makes comparison between studies difficult.

Future Research

- Future research should attempt to bridge the gender data gap in LGF and camogie players and assess various speed qualities.
- The match-play demands of both club and inter-county LGF should be investigated to assist coaching in preparing teams for competition.
- All relevant methodological variables during speed quality assessment should be recorded and reported.
- The decelerative requirements of all Gaelic games sports during match-play need to be examined in addition to the decelerative ability of players.

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