

Perfectionism Levels in Competitive Triathletes: Sex Differences

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Abstract

Perfectionism is a multidimensional trait with both adaptive (e.g., high standards, planning, organisation) and maladaptive components (e.g., fear of mistakes and doubts). In endurance sports such as triathlon, examining perfectionism may help identify psychological differences between male and female athletes. This study described perfectionism levels in licensed competitive triathletes ($N = 171$; 57 women, 114 men) and examined sex differences across dimensions. Using a descriptive cross-sectional design, participants completed a sociodemographic questionnaire and the Spanish version of the Multidimensional Perfectionism Scale (MPS). Both the six-factor and four-factor models were analysed. Results showed higher scores for women across all dimensions, although statistically significant differences were found only in Organisation ($p < .001$; $\hat{G} = 0.573$). Differences in total, adaptive, and maladaptive perfectionism were small and not statistically significant. These findings highlight the importance of analysing specific dimensions of perfectionism rather than relying solely on overall scores in competitive triathlon.

Keywords: Perfectionism, triathlon, sex differences

Introduction

Research in sport psychology has shown that athletes' performance and health are influenced not only by physical, technical, and tactical factors but also by psychological variables such as anxiety, stress, motivation, and personality traits, which affect adaptation to training and competition demands and overall well-being (Andersen & Williams, 1988; Ivarsson et al., 2017; Reardon et al., 2019). Among these variables, perfectionism has received increasing attention due to its multidimensional nature and the coexistence of adaptive and maladaptive components (Frost et al., 1990; Hill et al., 2018; Hill et al., 2024).

Contemporary models distinguish between perfectionist strivings, related to high standards and improvement orientation, and perfectionist concerns, associated with fear of mistakes, self-criticism, and evaluative anxiety (Madigan et al., 2017; Olmedilla et al., 2022; Stoeber, 2018; Hill et al., 2024). While perfectionist concerns are generally linked to psychological distress, perfectionist strivings may be associated with persistence and performance when concerns remain low (Cowden et al., 2019; Damián Núñez et al., 2024).

These aspects are particularly relevant in endurance sports such as triathlon, which require long-term planning, high training loads, and sustained self-regulation across swimming, cycling, and running (Millet et al., 2011; Guevara et al., 2024). In this context, certain perfectionism dimensions may support structured training and performance regulation, although they may also become maladaptive when associated with cognitive rigidity or difficulties adjusting training loads (Bales & Bales, 2012; Gil-Caselles et al., 2023). In addition, perfectionism has been linked to vulnerability to mental health problems and injuries when combined with stress or anxiety (Olmedilla et al., 2022; De Maria et al., 2024; Gil-Caselles et al., 2025b).

Despite growing interest in psychological factors in endurance sports, research specifically focused on triathlon remains limited, particularly regarding gender differences

(Rasquinha et al., 2014; Gil-Caselles et al., 2025b). Therefore, the aim of this study was to describe perfectionism levels among triathletes and to analyse potential gender differences.

Method

Design

A descriptive cross-sectional study was conducted (Ato et al., 2013) using online self-report surveys (León & Montero, 2020; Montero & León, 2007).

Participants

The sample consisted of 171 federated triathletes (114 men, 66.7%; 57 women, 33.3%). The mean age was 36.05 years ($SD = 11.27$), with 38.16 ($SD = 10.42$) for men and 31.82 ($SD = 11.79$) for women. Participants were recruited through convenience sampling.

Instruments

Personal and sport-related variables were collected using an ad hoc questionnaire. Perfectionism was assessed with the Spanish version of the Multidimensional Perfectionism Scale (Carrasco et al., 2010; Frost et al., 1990), a 35-item measure rated on a 1–5 Likert scale. Both the six-factor (Concern about Errors, Doubts about Actions, Parental Expectations, Parental Criticism, Personal Demands, Organisation) and four-factor (Fear of Errors, Parental Influences, Expectations of Achievement, Organisation) models were analysed, including total, adaptive, and maladaptive indices. Prorated scores were also calculated to facilitate comparison across dimensions.

Procedure

The study followed the Declaration of Helsinki and ethical standards (Harriss et al., 2019). Participation was voluntary and informed consent was obtained. The protocol was approved by the Ethics Committee of the University of Murcia (CEI-2623-2023). Data were collected online, and participants completed the sociodemographic questionnaire and the MPS.

Data analysis

Statistical analyses were conducted using SPSS v.28.0. Descriptive statistics, Cronbach's α , and Kolmogorov–Smirnov tests were computed. As normality assumptions were not met, gender differences were analysed using the Mann–Whitney U test and Hedges' $\hat{G}$.

Results

Normality analyses (Kolmogorov–Smirnov) indicated non-normal distributions; therefore, non-parametric tests were used. Internal consistency was adequate ($\alpha > .80$), with the highest values for Organisation ($\alpha = .901$) and the total scale ($\alpha = .923$) (Table 1).

Table 1. *Internal Consistency of the MPS in the Triathlete Sample*

Subscale	No. of items	α (triathletes)
Fear of Mistakes	11	.880
Parental Influences	9	.869
Expectations of Achievement	9	.832
Organisation	6	.901
Total scale	35	.923

Note. α = Cronbach's alpha.

Descriptive statistics for both models (Tables 2 and 3) showed higher values in Organisation and lower values in parental-related dimensions.

Table 2. Descriptive Statistics for the MPS Four-Factor Model (N = 171)

	N	Minimum	Maximum	Mean	Standard deviation
Fear of Mistakes	171	11,00	54,00	23,8012	8,44750
Parental Influences	171	9,00	43,00	16,0936	6,82577
Expectations of Achievement	171	9,00	44,00	24,5205	6,97250
Organisation 1	171	7,00	30,00	24,0117	4,88574
Fear of Mistakes pro	171	1,00	4,91	2,1637	,76795
Parental Influences pro	171	1,00	4,78	1,7882	,75842
Expectations of Achievement pro	171	1,00	4,89	2,7245	,77472
Organisation 1 pro	171	1,17	5,00	4,0019	,81429
N valid (per list)	171				

Note. M = mean; SD = standard deviation. Scores are reported as direct totals for each dimension.

Table 3. Descriptive Statistics for the MPS Six-Factor Model (N = 171)

	N	Minium	Maxium	Mean	Standard deviation
Concerns Mistakes	171	9,00	44,00	18,0409	7,11035
Doubts	171	4,00	20,00	9,4854	3,65152
Parental Expectations	171	5,00	24,00	9,2924	4,00542
Parental Criticism	171	4,00	20,00	6,8012	3,46515
Personal Demands	171	7,00	35,00	20,7953	5,82077
Organisation 2	171	7,00	30,00	24,0117	4,88574
Concerns Mistakes pro	171	1,00	4,89	2,0045	,79004
Doubts pro	171	1,00	5,00	2,3713	,91288
Parental Expectations pro	171	1,00	4,80	1,8585	,80108
Parental Criticism pro	171	1,00	5,00	1,7003	,86629
Personal Demands pro	171	1,00	5,00	2,9708	,83154
Organisation 2 pro	171	1,17	5,00	4,0019	,81429
N válido (por lista)	171				

Note. M = mean; SD = standard deviation. Scores are reported as direct totals for each dimension.

Adaptive perfectionism was slightly higher than maladaptive in both models (Table 4).

Table 4. Descriptive Statistics for Adaptive, Maladaptive, and Total Perfectionism (N = 171)

Score	N	Min	Max	M	SD
Adaptive perfectionism (6-factor model)	171	23.00	64.00	44.81	8.57
Maladaptive perfectionism (6-factor model)	171	22.00	93.00	43.62	14.69
Adaptive perfectionism (6-factor model, prorated)	171	1.77	4.92	3.45	0.66
Maladaptive perfectionism (6-factor model, prorated)	171	1.00	4.23	1.98	0.67
Adaptive perfectionism (4-factor model)	171	25.00	74.00	48.53	9.55
Maladaptive perfectionism (4-factor model)	171	20.00	89.00	39.89	13.55
Adaptive perfectionism (4-factor model, prorated)	171	1.67	4.93	3.24	0.64
Maladaptive perfectionism (4-factor model, prorated)	171	1.00	4.45	1.99	0.68
Total perfectionism	171	45.00	150.00	88.43	20.35
Total perfectionism (prorated)	171	1.29	4.29	2.53	0.58

Note. M = mean; SD = standard deviation. “Prorated” scores represent the mean score per item (range 1–5).

Women showed higher scores across most dimensions; however, significant differences were found only in Organisation ($\hat{G} = 0.57$), with small and non-significant differences in the remaining variables (Tables 5 and 6).

Table 5. Sex Differences in the MPS Four-Factor Model (N = 171)

	Gender	N	Mean	Standard deviation	Average ranger	Sum of ranger	U de Mann-Whitney	z	Sig.	Hedges $\hat{G}$
Fear of mistakes	Female	57	24,5965	9,01954	89,36	5093,50	3057,500	-,628	,530	,140
	Male	114	23,4035	8,15852	84,32	9612,50				
Parental Influences	Female	57	16,4386	6,78501	88,49	5044,00	3107,000	-,467	,641	,075
	Male	114	15,9211	6,86938	84,75	9662,00				
Expectations of Achievement	Female	57	24,6667	6,69577	86,83	4949,50	3201,500	-,156	,876	,031
	Male	114	24,4474	7,13472	85,58	9756,50				
Organisation 1	Female	57	25,8246	4,66416	106,07	6046,00	2105,000	-3,763	.001***	,573
	Male	114	23,1053	4,75854	75,96	8660,00				

$p < .001$

Table 6. Sex Differences in the MPS Six-Factor Model (N = 171)

	Gender	N	Mean	Standard deviation	Average ranger	Sum of ranger	U de Mann-Whitney	z	Sig.	Hedges $\hat{G}$
Concerns Mistakes	Female	57	18,7018	7,66477	90,54	5160,50	2990,500	-,849	,396	,139
	Male	114	17,7105	6,82749	83,73	9545,50				
Doubts	Female	57	9,8421	3,75970	90,27	5145,50	3005,500	-,801	,423	,146
	Male	114	9,3070	3,59972	83,86	9560,50				
Parental Expectations	Female	57	9,5614	3,86845	90,95	5184,00	2967,000	-,930	,352	,101
	Male	114	9,1579	4,08229	83,53	9522,00				
Parental Criticism	Female	57	6,8772	3,56105	85,15	4853,50	3200,500	-,162	,871	,033
	Male	114	6,7632	3,43151	86,43	9852,50				
Personal Demands	Female	57	20,7193	5,46010	85,36	4865,50	3212,500	-,120	,905	-,019
	Male	114	20,8333	6,01608	86,32	9840,50				
Organisation 2	Female	57	25,8246	4,66416	106,07	6046,00	2105,000	-3,763	<,001	,573
	Male	114	23,1053	4,75854	75,96	8660,00				

*** $p < .001$

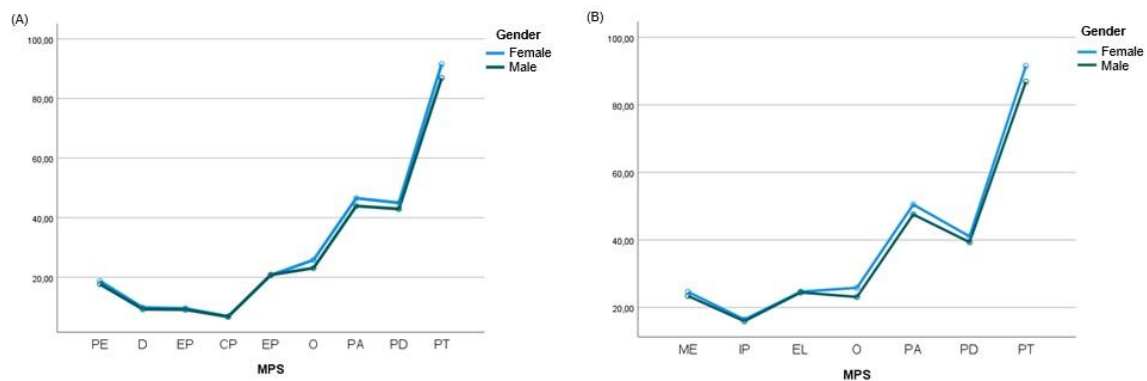
Overall scores were slightly higher in women but not significant, with a trend toward higher adaptive perfectionism (Table 7).

Table 7. Adaptive, Maladaptive, and Total Perfectionism Scores (N = 171)

	Gender	N	Mean	Standard deviation	Average ranger	Sum of ranger	U de Mann-Whitney	z	Sig.	Hedges G
Adaptive perfectionism (4-factor model)	Female	57	50,4912	9,04379	96,23	5485,00	2666,000	-1,912	,056†	,309
	Male	114	47,5526	9,68174	80,89	9221,00				
Maladaptive perfectionism (4-factor model)	Female	57	41,0351	13,42301	91,57	5219,50	2931,500	-1,041	,298	,125
	Male	114	39,3246	13,64175	83,21	9486,50				
Adaptive perfectionism (6-factor model)	Female	57	46,5439	7,87417	95,84	5463,00	2688,000	-1,840	,066†	,305
	Male	114	43,9386	8,79892	81,08	9243,00				
Maladaptive perfectionism (6-factor model)	Female	57	44,9825	14,56327	92,20	5255,50	2895,500	-1,159	,246	,138
	Male	114	42,9386	14,76499	82,90	9450,50				
Total Perfeccionism	Female	57	91,5263	19,82342	93,59	5334,50	2816,500	-1,417	,156	,228
	Male	114	86,8772	20,51166	82,21	9371,50				

† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

Figure 1 shows similar gender profiles across both models, highlighting higher values in Organisation.

**Figure 1.** Mean profiles of the MPS by gender: (A) six-factor model and (B) four-factor model.

Discussion

The results support the conceptualisation of perfectionism as a multidimensional construct in sport psychology (Frost et al., 1990; Hill et al., 2018; Hill, 2026; Stoeber, 2018). High levels of Organisation suggest a strong orientation towards planning and structured training, consistent with the demands of triathlon as an endurance sport requiring long-term organisation and self-regulation (Guevara et al., 2024; Millet et al., 2011).

Women showed higher scores across all dimensions, although significant differences were found only in Organisation, indicating relatively similar perfectionism profiles across genders. Previous studies also suggest that gender differences in performance-related psychological variables are generally small and context-dependent (Rasquinha et al., 2014), highlighting the importance of analysing specific dimensions rather than overall scores (Hill et al., 2018; Hill et al., 2024; Stoeber, 2018).

Although women showed slightly higher total, adaptive, and maladaptive perfectionism scores, differences were not significant. The predominance of Organisation together with lower concern-related dimensions suggests a mainly self-regulatory function, which may become maladaptive in demanding contexts when associated with rigidity or difficulties adjusting training loads (Bales & Bales, 2012; Gil-Caselles et al., 2023).

These findings can be interpreted within psychosocial models that link psychological factors to injury vulnerability (Andersen & Williams, 1988; Ivarsson et al., 2017). While structured training may support adherence and performance, excessive rigidity may increase risk behaviours when training continues despite fatigue or pain (Bales & Bales, 2012).

Psychological support should therefore promote flexible self-regulation and adaptive load management. Recent research also suggests that perfectionism profiles combining high effort and great concern may increase vulnerability in demanding sport contexts (De Maria et al., 2024; Damián Núñez et al., 2024; Gil-Caselles et al., 2025b).

Overall, triathletes showed a perfectionism profile characterised by high levels of Organisation, with gender differences mainly concentrated in this dimension, highlighting its relevance for understanding self-regulation in endurance sports.

Limitations, Future Directions and Practical Implications

The cross-sectional design prevents causal inferences, and convenience sampling may have reduced statistical power. Future research should include triathlon-specific variables and profile-centred approaches to examine links with mental health and injury risk. Assessing perfectionism dimensionally may help distinguish adaptive organisational profiles from evaluative concerns. In triathlon, planning should be combined with flexible goal adjustment and load management to avoid rigid behaviours.

Conclusions

This study examined the perfectionism profile of federated triathletes and gender differences using the MPS. High scores were observed in Organisation, indicating a strong orientation towards planning and training structure. Women showed higher mean values across all dimensions, although the only significant difference was found in Organisation. Overall, the findings support the multidimensional assessment of perfectionism in triathlon, suggesting that group differences may appear in specific facets rather than in overall scores.

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