

Social Psychology

Is an athlete's perfectionism associated with the performance of indoor football teams?

José Roberto A. do Nascimento Junior¹

 <http://orcid.org/0000-0003-3836-6967>

Roseana P. R. Batista¹

 <http://orcid.org/0000-0002-2893-0168>

Adson A. da Silva¹

 <http://orcid.org/0000-0001-9197-1336>

Carla Thamires L. Granja¹

 <http://orcid.org/0000-0002-5859-0539>

Lenamar Fiorese²

 <http://orcid.org/0000-0003-1610-7534>

Leonardo de S. Fortes³

 <http://orcid.org/0000-0002-0778-769X>

How to cite this article: Nascimento, J. R. A. Junior, Batista, R. P. R., Silva, A. A., Granja, C. T. L., Fiorese, L., & Fortes, L. S. (2020). Is an athlete's perfectionism associated with the performance of indoor football teams? *Psicologia: Teoria e Prática*, 22(2), 317–337. doi:10.5935/1980-6906/psicologia.v22n2p317-337

Submission: 07/01/2019

Acceptance: 15/04/2020



The content of *Psicologia: Teoria e Prática* is distributed under the terms of the Creative Commons Attribution License.

- 1 Universidade Federal do Vale do São Francisco (Univasf), Petrolina, PE, Brasil.
- 2 Universidade Estadual de Maringá (UEM), Maringá, PR, Brasil.
- 3 Universidade Federal da Paraíba (UFPB), João Pessoa, PB, Brasil.

Abstract

This study investigated the association between the perfectionism traits of 140 futsal athletes and their teams' performance markers. The athletes were divided into two groups: Medalists ($n = 29$) and Non-medalists ($n = 111$). The instruments used were The Sport Multidimensional Perfectionism Scale-2 (SMPS-II) and the official game bulletins for collecting performance markers (goals scored, goals conceded, number of wins, number of losses, and points added in the competition). Data analysis was conducted using the Mann-Whitney "U," Spearman correlation, and Path Analysis. The results showed that the non-medal players present more doubts in action than the medalists ($p = 0.008$). Perfectionist strivings had a significant and positive association with performance markers ($\beta = 0.17$) and negative association with goals conceded ($\beta = -0.23$) in medal players, while perfectionist concerns were negatively associated ($\beta > -0.20$) with non-medalist markers. It was concluded that adaptive perfectionism could be considered an intervening factor in collective performance in futsal, especially in successful teams.

Keywords: personality; performance; sport; Sport Psychology; perfectionism.

O PERFECCIONISMO DOS ATLETAS ESTÁ ASSOCIADO AO DESEMPENHO DE EQUIPES DE FUTSAL?

Resumo

Este estudo investigou a associação entre o perfeccionismo de 140 atletas e o desempenho de equipes de futsal. Os atletas foram divididos em dois grupos: medalhistas ($n = 29$) e não medalhistas ($n = 111$). Os instrumentos foram a Escala Multidimensional de Perfeccionismo-2 e os boletins dos jogos para a coleta dos indicadores de desempenho (gols marcados/sofridos, número de vitórias/derrotas e pontos somados na competição). A análise dos dados foi conduzida por meio dos testes de Mann-Whitney, correlação de Spearman e Path Analysis. Os resultados revelaram que os atletas não medalhistas apresentaram mais dúvidas na ação ($p = 0,008$). Os esforços perfeccionistas apresentaram associação positiva com os gols marcados ($\beta = 0,17$) e negativa com os gols sofridos ($\beta = -0,23$) nos jogadores medalhistas, enquanto as preocupações perfeccionistas apresentaram associação negativa ($\beta > -0,20$) com os indicadores de desempenho dos jogadores não medalhistas. Concluiu-se que o perfeccionismo adaptativo pode ser considerado um fator interveniente no desempenho coletivo no futsal, principalmente em equipes bem-sucedidas.

Palavras-chave: personalidade; desempenho; esporte; Psicologia do Esporte; perfeccionismo.

¿EL PERFECCIONISMO DE LOS ATLETAS ESTÁ ASOCIADO AL DESEMPEÑO DE EQUIPOS DE FÚTBOL SALA?

Resumen

Este estudio investigó la asociación entre los rasgos de perfeccionismo de 140 atletas de fútbol sala con los marcadores de rendimiento de sus equipos. Los atletas se dividieron en dos grupos: medallistas ($n = 29$) e no medallistas ($n = 111$). Los instrumentos utilizados fueron The Sport Multidimensional Perfectionism Scale-2 (SMPS-II) y los boletines oficiales del juego para recopilar marcadores de rendimiento (goles marcados, goles recibidos, número de victorias, número de pérdidas y puntos agregados en la competencia). El análisis de los datos se realizó mediante las pruebas de U de Mann-Whitney, correlación de Spearman y Path Analysis. Los resultados mostraron que los jugadores que no son medallas presentan más dudas en la acción que los medallistas ($p = 0,008$). Los esfuerzos perfeccionistas tuvieron una asociación significativa y positiva con los marcadores de rendimiento ($\beta = 0,17$) y la asociación negativa con los objetivos concedidos ($\beta = -0,23$) en los jugadores de medalla, mientras que las preocupaciones perfeccionistas se asociaron negativamente ($\beta > -0,20$) con marcadores no medallistas. Se concluyó que el perfeccionismo adaptativo puede considerarse como un factor de intervención en el desempeño colectivo en el futuro, especialmente en equipos exitosos.

Palabras clave: personalidad; desempenho; deporte; Psicología del Deporte; perfeccionismo.

1. Introduction

Perfectionism can be considered a multidimensional personality disposition that interferes with the life domains of an individual in the course of their existence (Stoeber, 2018) and, perhaps, for this reason, has generated a great deal of curiosity and investigation, especially in the sports context (Hill & Madigan, 2017; Stoeber, 2018). When deemed a personality disposition, perfectionism is understood as a phenomenon that can be learned and shaped by experiences throughout life and changed over time through situations given by the social context (Stoeber, 2018), differently from when it is considered a personality trait, which is regarded as general, stable and responsible for consistent patterns of behavior (Stoeber, Corr, Smith, & Saklofske, 2018). Currently, perfectionism is taken as a complex event associated with personal and interpersonal components that establishes relations with different psychological phenomena, such as stress and psychological wellbeing (Chang, 2006).

In the sports context, perfectionism presents itself as a common characteristic in athletes at different competitive levels (Dunn, Gotwals & Dunn, 2005; Stoeber, 2014) and it can be associated with both engagement in sports activities and sports-related leisure (Jowett, Hill, Hall, & Curran, 2016; Vink & Raudsepp, 2018), and stress and sports devaluation (Hill, 2013), affecting the mental health and performance of these individuals (Stoeber, 2011). From the multidimensional perspective, perfectionism can be comprehended from its two main characteristics: perfectionist strivings and perfectionist concerns (Stoeber, 2014). The adaptive aspects of perfectionism are related to perfectionist strivings, referring to the tendency that people have to set high standards for themselves and assign them great importance. Perfectionist strivings are associated with positive characteristics, processes, and results, such as positive affection and satisfaction with life, for instance (Macedo, Marques, & Pereira, 2014). As for perfectionist concerns, they correspond to the maladaptive aspects of perfectionism, encompassing elements such as concern over mistakes, doubts about actions, socially prescribed perfectionism, as well as parental expectations and criticism. This perfectionist trait is connected to negative characteristics, processes, and results and can trigger harmful psychic occurrences, such as anxiety, depression, and burnout, subjecting athletes to possible illnesses (Nixdorf, Frank, & Bekmann, 2016).

Recent research has shown that perfectionist strivings are commonly associated with positive aspects of behavior, helping athletes reach their potential in sports (Gotwals, & Spencer-Cavaliere, 2014; Gould, Dieffenbach, & Moffett, 2002; Larkin, O'Connor, & Williams, 2015; Nascimento Junior, Vissoci, Lavalée, Codonhato, & Vieira, 2017). As for perfectionist concerns, in their turn, it is a consensus among researchers that this dimension tends to be positively related to maladaptive responses (Gotwals, Stoeber, Dunn, & Stoll, 2012, Hill, & Madigan, 2017, Jowett et al., 2016). However, the behavioral outcomes of perfectionist concerns can be healthy when interacting with higher levels of perfectionist strivings (Smith, Saklofske, Yan, & Sherry, 2015). Thus, perfectionism is understood as an ambivalent characteristic that can present both positive and negative aspects at the same time (Stoeber, 2011).

In a study conducted by Vieira, Nascimento Junior, and Vieira (2013), which analyzed the correlations between adaptive and maladaptive perfectionism and group cohesion, the athletes who showed greater adaptive perfectionism

tendencies proved to be more individually committed to their teams' tasks and goals. In another research, Nascimento Junior et al. (2017) found that, when mediated by the satisfaction of basic psychological needs, the impact of adaptive perfectionism on team cohesion increases, while the effects of maladaptive perfectionism decrease.

Understanding how perfectionism interferes with an athlete's behavior is important as it can affect athletic performance individually and in sports teams (Hill, Stoeber, Brown, & Appleton, 2014). Madigan, Stoeber, & Passfield (2017) observed that the two facets of perfectionism were related to performance goals, with perfectionism strivings correlating positively with achievement goals, whereas perfectionist concerns were oriented to avoidance, showing that both dimensions relate differently to sports performance. Madigan, Hill, Anstiss, Mallinson-Howard, & Kumar (2018) related perfectionism to training performance and found that perfectionist strivings positively explain the performance of athletes, whereas perfectionist concerns presented no relationship with the athlete's behavior. The findings further indicate that those athletes with high levels of perfectionist strivings outperformed those with lower levels of perfectionist strivings.

Still concerning perfectionist strivings, Larkin et al. (2015) investigated differences between athletes with high and low levels in this dimension to engage in activities meant to improve their athletic performance. The research showed that the athletes belonging in the team with high perfectionist strivings invested more time doing sports and indirectly engaging in sports activities, compared to the group of athletes with low levels of perfectionist strivings, suggesting that perfectionist strivings have a positive indirect effect on performance.

In indoor football, a sport modality that requires great physical, technical and tactical preparation associated with decision-making skills for performance boost (Ribeiro, Sousa, Rocha, Fernandes, & Moreira, 2013), using indicators such as the number of finishings, right and wrong passes, scored goals and conceded goals is a good parameter to understand a team's performance (Ribeiro et al., 2013). Thus, considering the scarcity of investigations associating perfectionism and sports performance (Hall, Hill, & Appleton, 2012; Stoeber, 2012), this research intends to explore such gap and becomes relevant by proposing itself to understand how a personality disposition – in this case, perfectionism – can affect the performance of teams, advancing as to the search for individual differences of

perfectionism in sports and to the understanding of how these differences affect collective performance.

In light of the foregoing, the present study aimed to investigate the association between the perfectionism dimensions of indoor football athletes and the performance indicators of teams during a competition. The hypothesis is that the athletes' perfectionist strivings, associated with adaptive characteristics of perfectionism, will be positively associated with team performance, especially for athletes in medal-winning teams, whereas perfectionist concerns, associated with maladaptive characteristics of perfectionism, will be negatively associated with the performance indicators.

2. Method

2.1 Participants

This cross-sectional study had the participation of 140 male athletes, aged on average 24.8 years old, with the standard deviation being 4.9 years, playing in 15 teams that participated in the Copa TV Grande Rio de Futsal, an indoor football cup held in the city of Petrolina, in Pernambuco, Brazil, in 2017. The Copa TV Grande Rio de Futsal is the main amateur indoor football competition in the states of Pernambuco and Bahia, whose regulation admits the participation of both amateur and professional athletes. The participants were selected non-probabilistically and by convenience. The following inclusion criteria were adopted: 1. being at least 18 years old; 2. being registered for the Copa TV Grande Rio de Futsal 2017. For the conduction of the study, they were divided into two groups, according to the performance level of the teams after the competition:

- Medal winners (M): Athletes in teams that finished the competition in the 1st, 2nd and 3rd places ($n = 29$), that is, those who were awarded in the competition;
- Non-medal winners (NM): Athletes in teams that finished the competition from the 4th place on ($n = 111$), that is, those who were not awarded in the competition.

2.2 Instruments

To identify the perfectionism dimensions, the Sport Multidimensional Perfectionism Scale-2 (SMPS-2) was used; developed by Gotwals and Dunn (2009), it was validated for the Brazilian context by Nascimento Junior, Vissoci, Lavallee and Vieira (2015), with satisfactory internal consistency values ($\alpha > 0.70$) and factor structure values ($\chi^2/df = 2.01$; CFI = 0.94; GFI = 0.92; AGFI = 0.91; TLI = 0.93; RMSEA = 0.05 (I.C. 0.04-0.06)). The instrument consists of 24 items distributed into four dimensions: personal standards/organization, concern over mistakes, perceived parental pressure, doubts about action. Personal standards/organization include personal expectations and requirements that the athletes set, as well as the importance they give to order and organization. Concern over mistakes refers to the athlete's negative feelings about failure, as well as their belief that their faults are associated with losing the respect of other athletes. Perceived parental pressure is related to the athlete's perception of their parents' criticism and expectations. Doubts about actions correspond to one's excessive tendencies to have doubts about their own performance. The items are answered on a 5-point Likert scale from 1 (completely disagree) to 5 (completely agree). Cronbach's alpha for the instrument dimensions in the present research ranged from $\alpha = 0.73$ to $\alpha = 0.79$, indicating strong reliability.

To analyze the teams' performance, the following indicators were used: scored goals, conceded goals, number of wins, number of defeats, and total score in the competition, which were sourced from match reports.

2.3 Procedures

The study is integrated with an institutional project approved by the Research Ethics Committee of the Federal University of Vale do São Francisco (Legal opinion No 1.648.086). First, contact was made with TV Grande Rio, a TV channel affiliated to Rede Globo (a major TV network in Brazil), so that authorization was requested for data to be collected with the athletes playing in the teams participating in the Copa TV Grande Rio de Futsal 2017. Afterward, contact was made with the board and the technical commission of each team participating in the competition. The questionnaire was applied before the first match of the team in the competition (Figure 2.3.1). The application was performed collectively, in a private room, without

the coaches. Performance markers were analyzed at the end of the competition by means of official match reports.

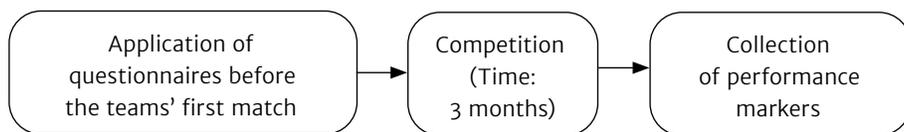


Figure 2.3.1. Design of the research.

2.4 Data Analysis Methodology

For data normality verification, the Kolmogorov-Smirnov test was used. Considering that the data did not show normal distribution, a descriptive presentation was adopted using Median (Md) and Interquartile intervals (Q1; Q3), with subsequent employment of non-parametric tests. To compare the perfectionism dimensions between medal winners and non-medal winners, the Mann-Whitney “U” test was run. Spearman’s correlation coefficient was adopted to correlate the perfectionism dimensions with the performance indicators. For all analyses, a significance level of $p \leq 0.05$ was adopted, using the Statistical Package for the Social Sciences (SPSS) – IBM 22.0.

To check the magnitude of the association between the perfectionism dimensions among the athletes and the performance indicators of the teams, different Path Analysis models were conducted by means of Analysis of Structural Equations with the variables that obtained significant correlation ($p < 0.05$). The existence of outliers was assessed by the Mahalanobis squared-distance (MD2), and the univariate normality of the variables was assessed through coefficients of univariate and multivariate asymmetry ($ISk1 < 3$) and kurtosis ($IKul < 10$). Because the data did not present a normal distribution, the Bollen-Stine Bootstrap technique was used for correcting the value of the coefficients estimated by the Maximum Likelihood method (Maroco, 2010), implemented on software AMOS, version 22.0. To check the fit of the sample for the proposed analysis, the Bootstrapping technique was applied. No MD2 values that could indicate the existence of outliers were observed, neither was there sufficiently strong correlations between the variables that indicated multicollinearity (Variance Inflation Factors < 5.0).

Following recommendations by Kline (2012), the interpretation of the regression coefficients had as reference: small effect for coefficients < 0.20 ; medium effect for coefficients up to 0.49 , and strong effect for coefficients > 0.50 ($p < 0.05$).

3. Results

A significant difference was found when comparing the perfectionism dimensions between the athletes in the M and NM teams (Table 3.1) only in the 'doubts about action' dimension ($p = 0.008$), suggesting that the players in the NM teams had more doubts about their own performance and decision making than the players in the M teams did. There was no significant difference in the 'personal standards/organization' ($p = 0.447$), 'concern over mistakes' ($p = 0.877$) and 'perceived parental pressure' ($p = 0.083$) dimensions between the teams.

The performance indicators with significant difference ($p > 0.05$) between M and NM teams (Table 3.1) were scored goals ($p = 0.001$) and conceded goals ($p = 0.003$), number of wins ($p = 0.001$) and of points ($p = 0.001$), evidencing that M teams had more scored and conceded goals, in addition to a higher number of wins and points in the competition. There was no significant difference between teams for the defeats marker ($p = 0.998$).

Table 3.1. Comparison between the dimensions of perfectionism and the performance markers of Medal winners (M) and Non-medal winners (NM) indoor football athletes.

VARIABLES	M (n = 29)	NM (n = 111)	p	U
	Md (Q1; Q3)	Md (Q1; Q3)		
<i>Dimensions of perfectionism</i>				
Personal Standard/ Organization	3.7 (3.4; 4.2)	4.0 (3.6; 4.4)	0.447	1462.00
Concern over Mistakes	3.3 (2.6; 3.5)	3.0 (2.5; 3.8)	0.877	1579.50
Perceived Parental Pressure	2.4 (2.0; 3.1)	2.8 (2.0; 3.3)	0.083	1273.00
Doubts about Action	2.3 (1.9; 2.8)	2.8 (2.0; 3.3)	0.008*	1097.00
<i>Performance markers</i>				
Scored Goals	26.0 (25.0; 37.0)	16.0 (5.0; 22.0)	0.001*	399.00
Conceded Goals	15.0 (13.0; 19.0)	13.0 (10.0; 18.0)	0.003*	1040.00
Number of Wins	4.0 (3.0; 5.0)	1.0 (1.0; 3.0)	0.001*	198.00
Number of Defeats	1.0 (0.0; 3.0)	2.0 (2.0; 2.0)	0.998	1609.00
Total Score	15.0 (10.0; 18.0)	4.0 (3.0; 10.0)	0.001*	198.00

*p < 0.05: Significant difference ("U" of Mann-Whitney test).

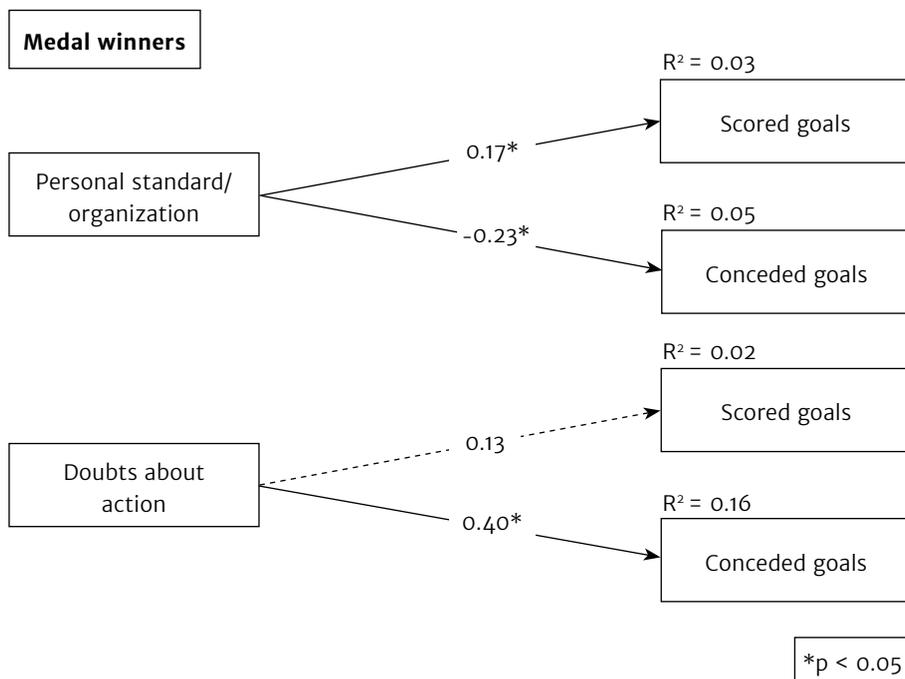
Concerning the correlation between the performance markers and the perfectionism dimensions (Table 3.2), the following significant correlations ($p > 0.05$) were found for the athletes in the M teams: personal standards/organization with scored goals ($r = 0.32$) and conceded goals ($r = -0.32$); doubts about action with scored goals ($r = -0.34$) and conceded goals ($r = 0.34$). For the players in the NM teams, a significant correlation was found only as to doubts about action with the number of wins ($r = -0.25$) and points scored in the competition ($r = -0.23$).

Table 3.2. Correlation between the dimensions of perfectionism and the performance markers of indoor football athletes.

	Medal winners								
	1	2	3	4	5	6	7	8	9
Non-medal winners									
Dimensions of perfectionism									
1. Personal Standard/Organization	–	0,32*	0,16	-0,05	0,32*	-0,32*	0,13	-0,13	0,13
2. Concern over Mistakes	0,30*	–	0,43*	0,04	0,06	-0,06	-0,09	0,09	-0,10
3. Perceived Parental Pressure	0,30*	0,44*	–	0,32*	-0,13	0,13	-0,17	0,17	-0,17
4. Doubts about Action	0,11	0,31*	0,46*	–	-0,34*	0,34*	0,08	-0,08	0,08
Performance markers									
5. Scored Goals	0,08	0,08	0,04	0,13	–	-1,0*	0,37*	-0,37*	0,37*
6. Conceded Goals	0,13	0,04	0,05	-0,04	0,12	–	0,37*	-0,37*	0,37
7. Number of Wins	-0,10	0,05	0,01	-0,25*	0,70*	-0,33*	–	-1,0*	1,0*
8. Number of Defeats	0,13	-0,03	-0,02	0,16	-0,40*	0,57*	-0,80*	–	-1,0*
9. Total Score in the competition	-0,08	0,08	0,01	-0,23*	0,80*	-0,20*	0,97*	-0,77*	–

* $p < 0.05$: Significant correlation (Spearman coefficient).

To verify the magnitude of the association between the athletes' perfectionism dimensions and the performance indicators, after the correlation analysis, Path Analysis models were conducted among the variables that presented a significant correlation ($p < 0.05$). In the model for the athletes in the M teams (Figure 3.1), the dimension of personal standards/organization showed significant association ($p < 0.05$) with scored goals and conceded goals, explaining 3% and 5% of the variance of the variables, respectively. As for doubts about action, they associated significantly ($p < 0.05$) only with conceded goals and explained 16% of the variance of this performance indicator.



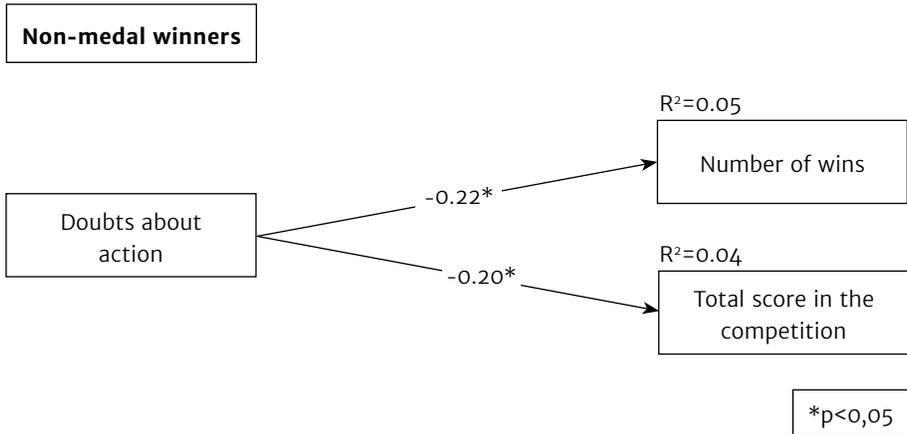
Note: The asterisks refer to values that were statistically significant, considering the number of p adopted, which is shown in the lower right corner of the figure.

Figure 3.1. Model of the association between the dimensions of perfectionism of the athletes and the performance markers of medal winners teams.

When it comes to the individual trajectories of the model for the athletes in the M teams (Figure 3.2), the 'personal standards/organization' dimension showed a moderate and inverse effect on conceded goals ($\beta = -0.23$), indicating that the more the athlete has this perfectionism characteristic, the fewer goals the teams concede. Moreover, these characteristics also showed a positive and weak effect on scored goals ($\beta = 0.17$), revealing a direct proportional association between variables. With respect to the 'doubts about action' dimension, it had a moderate effect on the goals conceded by the team ($\beta = 0.40$), that is, the more the athletes had doubts when making decisions, the more goals the teams conceded during the matches.

As for the athletes in the NM teams (Figure 3.2), the 'doubts about action' dimension showed significant ($p < 0.05$) and negative association with the 'number

of wins' and 'number of points' indicators of the teams, explaining 5% and 4% of the variance of the variables, respectively. About the individual trajectories of the model, an increase in doubts when making decisions had a moderate and inverse effect on the number of wins ($\beta = -0.22$) and of points among the teams ($\beta = -0.20$), suggesting that the more the athletes have doubts about their actions, the fewer points and wins the teams obtain.



Note: The asterisks refer to values that were statistically significant, considering the number of p adopted, which is shown in the lower right corner of the figure.

Figure 3.2. Model of the association between the dimensions of perfectionism of the athletes and the performance markers of non-medal winners teams.

4. Discussion

The objective of the present study was to investigate how perfectionism dimensions are associated with the performance markers of M and NM teams in a competition. The findings showed that, as for the perfectionism dimensions, the athletes belonging in the NM teams had more doubts about actions, compared to those in the M teams. Concerning performance markers, the teams in which the athletes had high organization standards scored more goals and conceded fewer ones during the competition, obtaining a higher number of wins and points, compared to non-medal winning teams. Personal standards/organization were positively associated with the scored goals and negatively associated with the

conceded goals of the M teams. Doubts about action associated positively only with conceded goals. For the NM teams, only doubts about actions showed an inverse association with wins and points scored in the competition.

The results found when comparing the perfectionism dimensions between teams showed that the athletes in the NM teams had higher rates of doubts about actions than the athletes in the M teams did, presenting an inferior performance during the competition, compared to the athletes in the M teams. Doubts about actions refer to a characteristic present in the 'perfectionist concerns' dimension, related to the so-called maladaptive perfectionism, and correspond to the athlete's tendency to have doubts about their own performance (Stoeber, 2018), while worrying about the satisfactory conclusion of their tasks and anticipating mistakes in order to try to avoid them (Gucciardi, 2012; Stoeber, 2014).

In the present study, the doubts presented by the athletes in the NM teams may have had an influence on the lower number of goals scored by the team, leading to a lower number of wins and, consequently, of points scored during the competition. On the other hand, the athletes in the M teams presented lower rates of doubts about actions, and their teams scored more goals and had a higher number of wins and points than the NM teams did. These data evidence that the athletes who showed more behaviors related to perfectionist strivings had a greater sports success compared to those with more characteristics of perfectionist concerns. Perfectionist concerns are related to the athlete's negative responses and with indicators of psychological maladjustment, whereas perfectionist strivings contribute to a better athletic performance (Madigan et al., 2018; Stoeber, 2011).

According to Oliveira et al. (2015), perfectionist concerns are linked to an exaggerated concern over mistakes, doubts about actions to be taken, and discrepancies between the athlete's actual performance and set standards, which was observed in the investigated group of NM athletes. The authors further point out that success-adaptive perfectionism in the sports context, which is characterized by personal and organization standards by which athletes establish for themselves excessive requirements as to task execution and assign major importance to order and organization, is present at a higher level in athletes considered as winners/successful.

The association between the perfectionism dimensions and the performance markers for the athletes in the M teams evidenced that the perfectionism characteristics associated with personal standards/organization were directly related to the goals

scored during the competition, and inversely related to conceded goals, meaning that the teams in which the athletes had a greater tendency to set high standards for themselves and a desire for order, scored more goals and conceded fewer ones. The doubts about actions presented by the medal-winning athletes explained the goals conceded by the team, indicating that the more the athletes worried about the execution of their tasks, the more goals their teams conceded. These results evidence the ambiguous characteristic of perfectionism. At the same time that the athletes in the M team showed characteristics of perfectionist strivings, they also presented characteristics of perfectionist concerns. According to the tripartite model of perfectionism (Stoeber, 2012), individuals have characteristics from both dimensions, with perfectionist strivings being adaptive when in the presence of small perfectionist concerns, which may have happened with the sample of M athletes.

In the model for the athletes in the NM teams, doubts about actions presented significant and inverse associations with the number of wins and points scored by the teams, showing that the teams that have athletes with doubts about actions may present an inferior performance in the course of a competition, that is, the more the athletes worried about making decisions, the fewer wins and, consequently, the fewer points their teams had in the competition. Doubts about actions were also associated with the goals conceded by the M teams, suggesting that, when the athletes had doubts about their actions, their teams conceded more goals. As for the athletes in the NM sample, although they had characteristics of perfectionist strivings, this was not enough to surpass the characteristics of perfectionist concerns, showing that this combination was sufficient to lead the athletes to an undesired outcome.

Corroborating with the findings, Madigan, Stoeber, & Passfield (2017) investigated perfectionism and the performance of young athletes, reporting that perfectionist striving associated positively with all approach goals, and that perfectionist concerns related positively to avoidance goals. This may explain why the team of NM athletes presented, in this research, negative associations with scored goals and lower rates of wins and goals scored in the competition compared to medal winners. By means of approach goals, the athlete represents success by showing performance competence, that is, by striving to be better than the others, believing that it is possible to achieve a certain outcome. Now, when it comes to performance-avoidance goals, the athletes strive to avoid results worse than those

of others (Stoeber, 2018). According to Sellars, Evans, & Thomas (2016), approach goals are associated with the prevalence of adaptive perfectionism, whereas avoidance goals are associated with the athletes' maladaptive behaviors, which correspond to undesired responses in sports practice, such as anxiety and fear of failing. It is known that the negative aspects of perfectionism, characterized by concerns over failing and by a need to perfectly meet established standards, cause in the athletes a feeling of helplessness and incapacity, negatively affecting anxiety, self-confidence, and mental health (Hamidi, & Besharat, 2010).

Because the athletes were focused on the task they intended to execute, all performance markers were superior for the M teams, except for the "defeat" marker, indicating that medal winners had a larger number of wins and points throughout the championship, as well as more scored and conceded goals compared to the NM group. Although the athletes' engagement during the competition may influence perfectionism development, it is also possible that certain aspects of perfectionism can improve their ability to boost their performance (Stoeber, Chesterman, & Tarn, 2010).

An exploratory study conducted by Larkin et al. (2015), with junior elite football players, reported that athletes with greater perfectionist strivings invest more time being indirectly involved in football than the group with lower perfectionist strivings did, which could explain their good performance, although this was not a factor directly measured in said study. Nonetheless, from this viewpoint, it is possible to assume that individuals with greater levels of perfectionist strivings wish to invest more time in a certain activity in order to enhance their skills, having greater chances to achieve more positive results.

Despite the findings of this research bringing important information on the individual differences that affect team performance, from the multidimensional perspective of perfectionism (Stoeber, 2011), the present study has some limitations. First, the sample was composed only of male athletes, and only one sports modality was investigated, which makes it impossible to generalize results to the sports context as a whole, although there are implications to other team sports. Future studies should investigate female indoor football players and athletes of other modalities. Besides that, even though the study included all athletes, both starters and bench, comparisons between these samples were not conducted. It is important for further research to investigate whether there is any

difference between these athletes. A third limitation refers to the unequal number of M and NM athletes, a discrepancy that may have compromised the statistical analyses. Because of the regulation of the competition, only the first three teams were awarded, limiting the number of M athletes. Subsequent studies should consider including more competitions so that the sample of NM athletes can be equivalent to that of M. Another major limitation has to do with the cross-sectional character of this investigation, which does not allow for causal inferences. Perhaps, a longitudinal study is capable of pointing at the causal nature of the association between athletes' perfectionism and team performance. Furthermore, multi-level analyses should be used towards understanding the complex relations between these variables in different groups. Though focused on performance, this study does not discard the possibility of perfectionism affecting the relations that an athlete establishes with sports and compromising their mental health in sports practice, which may directly affect performance, both individually and collectively. Thus, these relations deserve a more in-depth investigation in future researches.

It is possible to conclude that an athlete's adaptive perfectionism can be considered an intervening factor for collective performance in indoor football, especially in successful teams. On the other hand, maladaptive perfectionism, specifically doubts about actions, seems to be a harmful factor for the performance of both successful and unsuccessful teams. Although the two groups of athletes (M and NM) have facets from both types of perfectionism, perfectionist strivings, and perfectionist concerns, the individuals who proved to have fewer perfectionist concerns (M teams), such as doubts about actions, were more efficient in the competition compared to the other ones (NM teams). From a practical point of view, the present findings have implications for the understanding of perfectionism, as they identify their different facets within the sports context. It is important for sports psychologists and coaches to identify and recognize prevalent perfectionist behaviors in athletes, both harmful and beneficial so that they can plan their interventions by taking into account individual characteristics and making athletes acquire better self-knowledge in order to be able to adopt sport behaviors oriented to adaptive responses, towards optimizing the sports performance of teams, and for greater wellbeing and mental health in individual practice.

References

- Chang, E. C. (2006). Perfectionism and dimensions of psychological well-being in a college student sample: A test of a stress-mediation model. *Journal of Social and Clinical Psychology, 25*(9), 1001–1022.
- Dunn, J. G. H., Gotwals, J. K., & Dunn, J. C. (2005). An examination of the domain specificity of perfectionism among intercollegiate student-athletes. *Personality and Individual Differences, 38*, 1439–1448.
- Gotwals, J. K., & Dunn, J. G. H. (2009). A multi-method multi-analytic approach to establishing internal construct validity evidence: The Sport Multidimensional Perfectionism Scale 2. *Measurement in Physical Education and Exercise Science, 13*, 71–92. doi:10.1080/10913670902812663
- Gotwals, J. K., & Spencer-Cavaliere, N. (2014). Intercollegiate perfectionistic athletes' perspectives on achievement: Contributions to the understanding and assessment of perfectionism in sport. *International Journal of Sport Psychology, 45*(4), 271–297. doi:10.7352/IJSP.2014.45.271
- Gotwals, J. K., Stoeber, J., Dunn, J. G. H., & Stoll, O. (2012). Are perfectionistic strivings in sport adaptive? A systematic review of confirmatory, contradictory, and mixed evidence. *Canadian Psychology/Psychologie canadienne, 53*(4), 263–279. doi:10.1037/a0030288
- Gould, D., Dieffenbach, K., & Moffett, A. (2002). Psychological characteristics and their development in Olympic champions. *Journal of Applied Sport Psychology, 14*, 172–204. doi:10.1080/10413200290103482
- Gucciardi, D. F. (2012). Measuring mental toughness in sport: A psychometric examination of the performance inventory-a and its predecessor. *Journal of Personality Assessment, 94*(4), 393–403. doi:10.1080/00223891.2012.660292
- Hall, H. K., Hill, A. P., & Appleton, P. R. (2012). Perfectionism: A foundation for sporting excellence or an uneasy pathway toward purgatory? In G. C. Roberts & D. C. Treasure, *Advances in motivation in sport and exercise* (pp. 129–168). Champaign, IL: Human Kinetics.
- Hamidi, S., & Besharat, M. A. (2010). Perfeccionismo e ansiedade competitiva em atletas. *Procedia – Social and Behavioral Sciences, 5*, 813–817. doi:10.1016 / j.sbspro.2010.07.190
- Hill, A. P. (2013). Perfectionism and burnout in junior soccer players: A test of the 2 x 2 model of dispositional perfectionism. *Journal of Sport and Exercise Psychology, 35* (1), 18–29. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/23404875>

- Hill, A. P., & Madigan, D. J. (2017). A short review of perfectionism in sport, dance and exercise: Out with the old, in with the 2x2. *Current Opinion in Psychology*, *16*, 72–77. doi:10.1016/j.copsyc.2017.04.021
- Hill, A. P., Stoeber, J., Brown, A., & Appleton, P. R. (2014). Team perfectionism and team performance: A prospective study. *Journal of Sport & Exercise Psychology*, *36*, 303–315. doi:10.1123/jsep.2013-0206
- Jowett, G. E., Hill, A. P., Hall, H. K., & Curran, T. (2016). Perfectionism, burnout and engagement in youth sport: The mediating role of basic psychological needs. *Psychology of Sport and Exercise*, *24*, 18–26. doi:10.1016/j.psychsport.2016.01.001
- Kline, R. B. (2012). Assumptions in structural equation modeling. In R. H. Hoyle, *Handbook of structural equation modeling* (pp. 111–125). New York: Guilford.
- Larkin, P., O'Connor, D., & Williams, A. M. (2015). Perfectionism and sport-specific engagement in elite youth soccer players. *Journal of Sports Sciences*, *34*, 1305–1310. doi:10.1080/02640414.2015.1126673
- Macedo, A., Marques, M., & Pereira, A. T. (2014). Perfectionism and psychological distress: A review of the cognitive factors. *International Journal of Clinical Neuroscience and Mental Health*, *1*(6), 1–9. doi:10.21035/ijcnmh.2014.1.6
- Madigan, D. J., Hill, A. P., Anstiss, P. A., Mallinson-Howard, S. H., & Kumar, S. (2018). Perfectionism and training distress in junior athletes: The mediating role of coping tendencies. *European Journal of Sport Science*, *18*(5), 713–721. doi:10.1080/17461391.2018.1457082
- Madigan, D. J., Stoeber, J., & Passfield, L. (2017). Perfectionism and achievement goals revisited the 3x2 achievement goal framework. *Psychology of Sport and Exercise*, *28*, 120–124. doi:10.1016/j.psychsport.2016.10.008
- Maroco, J. (2010). *Análise de equações estruturais*. Lisboa: ReportNumber.
- Nascimento, J. R. A. Junior, Vissoci J. R. N., Lavallee D., Codonhato R., Nascimento, J. V., & Vieira, L. F. (2017). The mediating role of basic needs satisfaction on the relationship of perfectionism traits and team cohesion among elite futsal athletes. *International Journal of Sport Psychology*, *48*(6), 591–609. doi:10.7352/IJSP2017.48.591
- Nascimento, J. R. A. Junior, Vissoci, J. R. N., Lavallee, D., & Vieira, L. F. (2015). Adaptation and validation of the Sport Multidimensional Perfectionism Scale-2 (SMPS-2) for the Brazilian sport context. *Motriz: Revista de Educação Física*, *21*(2), 125–136. doi:10.1590/S1980-65742015000200003

- Nascimento, J. R. A. Junior, Vissoci, J. R. N., Lavallee, D., Codonhato, R., Nascimento, J. V., & Vieira, L. F. (2017). The mediating role of basic needs satisfaction on the relationship of perfectionism traits and team cohesion among elite futsal athletes. *International Journal of Sport Psychology*, 48, 591–609.
- Nixdorf, I., Frank, R., & Beckmann, J. (2016). Comparison of athletes' proneness to depressive symptoms in individual and team sports: Research on psychological mediators in junior elite athletes. *Frontiers in Psychology*, 7(893), 1–8. doi:10.3389/fpsyg.2016.00893
- Oliveira, L. P., Vissoci, J. R. N., Nascimento, J. R. A. Jr., Ferreira, L., Vieira, L. F., Silva, P. N., ... Vieira, J. L. L. (2015). O impacto do perfeccionismo na motivação de atletas de futebol de alto rendimento. *Revista Brasileira de Cineantropometria e Desempenho Humano*, 17(5), 601–611. doi:10.5007/1980-0037.2015v17n5p601
- Ribeiro, R. M., Souza, P. R. C., Rocha, R. R. M., Fernandes, B. M., & Moreira, E. C. (2013). Análise das finalizações como indicadores de rendimento em jogos de futsal. *Revista Mackenzie de Educação Física e Esporte*, 12(2), 89–99. Retrived from <http://editorarevistas.mackenzie.br/index.php/remef/article/view/3390/4646>
- Sellers, P. A., Evans, L. & Thomas, O. (2016). The effects of perfectionism in elite sport: Experiences of unhealthy perfectionists. *The Sport Psychologist*, 30, 219–230. doi:10.1123/tsp.2014-0072
- Smith, M. M., Saklofske, D. H., Yan, G., & Sherry, S. B. (2015). Perfectionistic strivings and perfectionistic concerns interact to predict negative emotionality: Support for the tripartite model of perfectionism in Canadian and Chinese university students. *Personality and Individual Differences*, 81, 141–147. doi:10.1016/j.paid.2014.09.006
- Stoeber, J. (2011). The dual nature of perfectionism in sports: Relationships with emotion, motivation, and performance. *International Review of Sport and Exercise Psychology*, 4(2), 128–145. doi:10.1080/1750984X.2011.604789
- Stoeber, J. (2012). Perfectionism and performance. In S. M. Murphy (Ed.), *The Oxford handbook of sport and performance psychology* (pp. 294–306). New York: Oxford University Press.
- Stoeber, J. (2014). Perfectionism in sport and dance: A double-edged sword. *International Journal of Sport Psychology*, 45, 385–394. doi:10.7352/IJSP.2014.45.385
- Stoeber, J. (2018). The psychology of perfectionism: An introduction. In J. Stober (Ed.), *The psychology of perfectionism: Theory, research, applications* (pp. 3–16). London: Routledge.

- Stoeber, J., Chesterman, D., & Tarn, T. (2010). Perfectionism and task performance: Time on task mediates the perfectionistic strivings-performance relationship. *Personality and Individual Differences*, 48, 458–462. doi:10.1016/j.paid.2009.11.021
- Stoeber, J., Corr, P. J., Smith, M. M., & Saklofske, D. H. (2018). Perfectionism and personality. In J. Stoeber (Ed.), *The psychology of perfectionism: Theory, research, applications* (pp. 68–88). London: Routledge.
- Vieira, L. F., Nascimento, J. R. A. Junior, & Vieira, J. L. L. (2013). Perfeccionismo y nivel de cohesión de grupo de deportistas adultos de fútbol sala. *Revista de Psicología del Deporte*, 22(2), 331–336.
- Vink, K., & Raudsepp, L. (2018). Perfectionistic strivings, motivation and engagement in sport-specific activities among adolescent team athletes. *Perceptual and Motor Skills*, 125(3), 1–16. doi:10.1177/0031512518765833

Authors notes

José Roberto A. do Nascimento Junior, Postgraduate Program in Physical Education and Postgraduate Program in Psychology, Federal University of Vale do São Francisco (Univasf); **Roseana P. R. Batista**, Postgraduate Program in Psychology, Federal University of Vale do São Francisco (Univasf); **Adson A. da Silva**, Postgraduate Program in Physical Education, Federal University of Vale do São Francisco (Univasf); **Carla Thamires L. Granja**, Postgraduate Program in Physical Education, Federal University of Vale do São Francisco (Univasf); **Lenamar Fiorese**, Associate Postgraduate Program in Physical Education, State University of Maringá (UEM); **Leonardo de S. Fortes**, Associate Postgraduate Program in Physical Education and Postgraduate Program in Cognitive Neuroscience and Behavior, Federal University of Paraíba (UFPB).

Correspondence concerning this article should be addressed to José Roberto de Andrade do Nascimento Junior, Avenida José de Sá Maniçoba, s/n, Centro, Petrolina, PE, Brazil. CEP 56304-205.

E-mail: jroberto.jrs01@gmail.com