

The moderating role of narcissism on the reciprocal relationship between social loafing and endurance performance

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We aim to investigate the effect of narcissism as a personality factor on endurance performance task. We measured participants' narcissism with self report measures of the Narcissistic Personality Inventory -16 and their perception of effort via the Ratings of Perceived Exertion. We then obtained participants' psychophysiological measures such as heart rate, heart rate variability and also body mass indexes. The final sample comprised 66 individuals (Mage=18.48; SD=1.50, n= 27 women, n= 39 men). All participants twice performed a multistage 20-meter shuttle run test in the same-sex teams of three: once when identifiability was low (team condition); and once when identifiability was high (individual condition). Our results revealed that narcissists' performance significantly decreased from individual to team conditions, whereas others displayed no such performance differences. Our results support the hypotheses that narcissists performed better when there was a chance for glory and socially loafed when no such opportunity was available. Results of the present study provide a sound basis foundation for future studies (i.e., endurance sports) on which to explore narcissism as individual differences in the competitive environment.

KEY WORDS: Performance, Narcissist, Individual, Group, Effort, Running.

Introduction

The main objective for sport psychologists studying achievement contexts is to determine factors that predict performance in sport. In this premise, researchers turned their interests to new personality factors to enhance athletic performance (Allen & Laborde, 2014). Unsurprisingly, one of the most popular personality factors to date is narcissism. The study of narcissism has been a stalwart feature of the sport psychology literature, and this is becau-

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se it relates to psychological factors that can ultimately determine better or worse performance in training and competition environment (Madigan, Stoeber, Culley, Passfield, & Hill, 2018). Therefore, the current study aimed to examine the moderating role that narcissism plays in sport settings. We built on previous research (Woodman, Roberts, Hardy, Callow, & Rogers, 2011) by focusing on competitive endurance performance under different conditions of low- and high-identifiability whether narcissism was a moderating or explanatory factor.

In clinical settings, narcissism is defined as “a pervasive pattern of grandiosity, need for admiration, and a lack of empathy” (American Psychiatric Association 2013, p. 669). In the current article, as opposed to people with the narcissistic personality disorder, the terms narcissists or high narcissists are used to describe individuals who report relatively high on valid self-report personality measure of narcissism such as the Narcissistic Personality Inventory (NPI; Raskin, & Hall, 1979; Ames, Rose, & Anderson, 2006). Contradictory, the term low narcissists are used to describe individuals with relatively low scores on such self-report measures. On the other hand, research in sub-clinical settings revealed that narcissism is associated with a grandiose, self-view, and feelings of entitlement (e.g., Morf & Rhodewalt, 2001). Narcissists consider themselves to be exceptional people who are superior to others (Gabriel, Critelli, & Ee, 1994; John & Robins, 1994), they report high levels of confidence (Campbell, Goodie, & Foster, 2004), and are self-focused and vain (Morf & Rhodewalt, 2001). Furthermore, narcissistic individuals enjoy competitions (Morf, Weir, & Davidov, 2000), and thrive in challenging, pressurized situations where others often choke (e.g., Roberts, Woodman, Hardy, Davis, & Wallace, 2012; Roberts, Woodman, Lofthouse, & Williams, 2014). Moreover, narcissistic individuals seem to enjoy competition because the competitive environment provides them with an opportunity to demonstrate their (self-perceived) abilities and skills to the world; therefore narcissists are keenly aware that different situations and environment offer more or less opportunity for their personal glory (Roberts et al., 2014). In other words, when there is a chance to show off and generate personal glory, narcissists are already motivated to perform well even under pressure. Comparatively, if there is no such opportunity for personal glory, they withdraw effort or perform poorly (Woodman et al., 2011).

Similarly, individuals who have a lower level of narcissism and also they are not so motivated by the opportunity for glory could sometimes choke under pressurized situations such as competition (Roberts et al., 2012). Sporting competitions are perfect examples of this environment for those who are high or low in narcissism. Particularly surprising in the context of the

competitive team sport environment, in which there is constant pressure to perform as an individual as well as a part of a team. In this environment, high narcissistic individuals may attempt to hide their actual performance when there is no personal identifiability, or conversely, they might engage in a high level of performance that compromises a team's climate of success when there is a such opportunity available.

Comparatively, research in narcissism revealed that narcissists often do not perform any better than low narcissistic individuals (Gabriel et al., 1994; John & Robins, 1994). For example, Wallace and Baumeister (2002) revealed that the narcissists' performance would be moderated by the degree of self-enhancement opportunity afforded by the task. Eventually, narcissist performers would perform better when self-enhancement opportunity is available and high (Woodman et al., 2011). Performing a difficult task under pressure or performing in front of thousands of people because such situation can provide an opportunity for narcissists to display their perceived superiority and to glean admiration (Woodman et al., 2011) would be a good example for the opportunity of self enhancement. In sports related research, for example, Woodman and colleagues (2011) shed light on narcissism as a moderator of social loafing on a cycling task under the conditions of low- and high-identifiability. In their investigation, it was found that high narcissistic individuals cycled further distance under the high-identifiability condition than under the low-identifiability condition. More specifically, narcissistic individuals performed better when they knew that their performance was to be identified (Woodman et al., 2011). Furthermore, researches in sport provide support for Wallace and Baumeister's (2002) findings by demonstrating the relationship between narcissism and performance in a competitive environment (Geukes, Mesagno, Hanrahan, & Kellmann, 2012), for instance, how the use of imagery can impact the relationship between narcissism and performance (Roberts, Callow, Hardy, Woodman, & Thomas, 2010) and the effect of leader behaviours on narcissist individuals' effort (Arthur, Woodman, Ong, Hardy, & Ntoumanis, 2011). Given the previous findings that the potential personality trait of narcissism appears to hold much promise in sporting environment because it seamlessly dovetails the psychological process of (especially for) endurance performance in sport. Therefore, the aim of the present study was to explore the effect of different level of narcissism on performers' endurance performance namely the 20-meter shuttle run test under two different conditions (e.g., individual and team performance). Thus, we hypothesized that participants with a high level of narcissism would perform less well when running as part of a team than running individually only for their personal glory. Finally, given that participants with a low le-

vel of narcissism who are thought to be less motivated by self-enhancement would perform similarly and therefore would not be affected by running for the team or running individually.

Method

PARTICIPANTS

Ninety individuals agreed to take part in the current study and attended the first session. Our final sample comprised 66 participants ($M_{age}=18.48$; $SD=1.50$, $n=27$ women, $n=39$ men) as 24 participants did not take part in the second session of this study due to not turning up to their training session or not being committed to participation criteria for the second session of this study. All participants were physically active and training minimum three times per week. These are either last year high school students or have just finished their high school students (or graduates in the past year), and they prepare themselves for the sport science departments' practical test as a part of their university application and enrolment. This study received institutional ethics approval, and all participants provided written informed consent before participating.

The GPower 3.1 (Faul, Erdfelder, Lang, & Buchner, 2007) power calculation software indicated that by adopting an alpha of .05 and a sample size of 66, the experiment was powered at .80 to detect significant differences between conditions for effect sizes exceeding $f = .20$ (i.e., small-to-medium size effects), by repeated measures analysis of variance (Cohen, 1992). While there are limited previous data upon which to base these calculations, Woodman et al.'s (2011) test of narcissism on social loafing, adopting a similar design, revealed large within-subject effects (η_p^2 's $> .25$). Accordingly, if similar effects were to emerge here, this study was more than adequately powered to detect them.

MEASURES

The Narcissistic Personality Inventory (NPI-16). We measured participants' narcissism with the NPI-16 inventory (Ames, Rose and Anderson, 2006; adopted into Turkish by Atay, 2009) is a 16 item measure of narcissism that is based on the 40 item NPI (Raskin & Terry, 1988). The NPI-16 was designed to assess participants' degree of narcissism as best reflected by a grandiose sense of self, feelings of entitlement, lack of empathy for others, and an exploitative interpersonal style. Each item from the inventory contains a narcissistic statement and a non-narcissistic statement in a forced-choice format. For example, for the narcissistic statement; *I expect a great deal from other people*, and for the non-narcissistic statement; *I like to do things for other people*. According to the NPI-16 participants receive a narcissism score that ranges from 0 to 16. Ames and colleagues (2006) reported satisfactory concurrent, internal, discriminant, and predictive validity, and a good reliability (e.g., Gebauer, Sedikides, Verplanken, & Maio, 2012; $\alpha = .74$; Jones, Woodman, Barlow, & Roberts, 2017; $\alpha = .73$). Cronbach's alpha in the present study was .84.

Ratings of Perceived Exertion (RPE). We used Borg's (1986) ratings of the RPE scale to measure participants' self-reported effort. Participants rated their perceived exertion on a scale ranging from 6 (no exertion at all) to 20 (maximal exertion) on a vertical scale. Participants

responded by pointing to their ratings of perceived exertion on the scale displayed (vertical cardboard with a 60 cm x 40 cm diameter) in front of them.

Heart rate (HR) and heart rate variability (HRV). HR and HRV were recorded using a Polar V800 heart rate monitor with a Polar H7 chest strap at a sampling frequency of 1000 Hz. Recordings were subsequently imported into the PolarFlow and the Kubios HRV 2.2 software (Tarvainen, Niskanen, Lipponen, Ranta-aho, & Karjalainen, 2014). Specifically, we computed heart rate (beats per minute), as well as the standard deviation of NN intervals (SDNN) and root mean square of successive R-R intervals (r-MSSD), as two time-domain measures of heart rate variability. We chose these measures because increased heart rate and decreased (heart rate variability) SDNN and r-MSSD have previously been associated with elevated physical exertion (Barlow, Woodman, Gorgulu, & Voyzey, 2016; Gorgulu, Cooke, & Woodman, 2019; Hardy, & Hutchinson, 2007; Marcora, Staiano, & Manning, 2009).

Bioelectrical Impedance Analysis (BIA). We obtained participants' Body Mass Indexes (BMI) via the Tanita BC 418 MA Segmental Body Composition Analyzer (Tanita, Japan) which is a single-frequency (50 kHz) BIA device incorporating eight electrodes. BIA measurements were carried out according to the manufacturer's manual in this study. Information on participant age, height, and body type (all routinely were classified as "standard" body type) were manually entered into the Tanita BC 418 MA. Participants were required to adhere to standard BIA testing guidelines (Kyle et al., 2004). BIA was performed in participants wearing light clothes, standing erect, and with bare feet on the analyser's footpads. The BIA provided data for whole-body and segmental (upper limbs and lower limbs) impedance and estimates of FM (in kg and as a percentage of total body weight), FFM (in kg), and TBW (in kg), as well as segmental (trunk, right and left upper limbs, and right and left lower limbs) FM and FFM estimates. The exact formula for total and segmental FM and FFM are proprietary and thus not accessible.

Task. Participants performed the multistage 20-meter shuttle run test (Leger, Mercier, Gadoury, & Lambert, 1988). For the 20-meter shuttle run test, participants were required to run back and forth on a 20-meter course and they must touch the 20-meter line at the same time that a beep signal was emitted from a pre-recorded tape. The starting speed was 8.5 km h⁻¹, and the frequency of the beep sound signals increases in such a way that running speed was increased by 0.5 km h⁻¹ each minute. Participants were given a total of three warning, if the line was not reached before the beep sounds the participant was given a warning and must continue to run to the line, then turn and try to catch up with the pace within two more beep sounds. If participants were not successful in catching up with the pace, then participants were eliminated after the third warning. The test ends up when the participant was no longer able to keep the pace and continue running with the beep sound.

PROCEDURE

On arrival, participants informed about the study and completed the consent form, demographic information sheet, and the NPI-16. Completed NPI-16 forms were placed in a sealed envelope so that all experimenters were blind to each participant's level of narcissism until all conditions had been completed and finished the study. Participants were then asked to measure their height and weight on a balance beam scale then obtained their BMI measures from the Tanita BC 418 MA Segmental Body Composition Analyser. A Polar H7 chest strap was attached to each participant's chest before the running task and started recording their HR and HRV for at least 5 minutes before the test. Following the warm up, 6 participants

received the first set of standardized instructions and completed their first 20-meter shuttle run test individually in the same sex of 6. Over the course of a 20-meter shuttle run test in every 20 beep sounds (1, 20, 40, 60, 80, 100, 120, and 140) participants were asked to rate the RPE scale that displayed in front of them and their HR and HRV were recorded via Polar V800 monitor throughout the test. Participants asked and encouraged to run as much as they can until they were no longer able to keep the pace with the beep sound. After completing the first test participants were asked to take a rest and to assign for the next week's test would take place at the same time, location and conditions.

During the second visit (a week later), participants received the second set of standardized instructions and asked them to run a 20-meter shuttle test as a group of 3 in the same sex as a part of the competition. This time, participants were told that their scores were not recorded individually but rather as a team and the competition was not ending until the last teammate stop running. Specifically, we told participants that their performance in this final performance would be recorded as a part of the competition and that we would share all their scores with their coaches and display them on the busy door of the training center. We also told them that the winning team of the competition (i.e., the highest number of points scored in total) would receive 300 Turkish Liras worth (approx. US\$50) gift and that the second- and third-placed teams would receive prizes of 150 TL and 60 TL gift, respectively. In this second session of the experiment, the procedure was identical to that reported in the first visit of 20-meter shuttle running test. At the end of the second and last visit, we debriefed all participants and thanked them for their participation.

Data Analysis

We used Judd, Kenny, and McClelland's (2001) regression procedure to test within-subject moderation, more superficially, we examined the potential moderating effects of narcissism (N) on performance – performance was operationalized as the total number of runs based on the 20-meter shuttle run test – in a repeated measures (low-identifiability and high-identifiability) design. The advantage of employing the Judd et al.'s (2001) method in the current study is that this approach is not bound by the large-sample assumptions underlying certain estimation procedures in multilevel modeling. According to Judd et al. (2001) methodology, we first regressed performance under high-identifiability condition (\hat{Y}_1) and performance under low-identifiability condition (\hat{Y}_2) on narcissism (see Table 2). To examine narcissism as a moderator, we regressed the performance difference – Y_d (i.e., $Y_1 - Y_2$) – on narcissism. A significant narcissism \times performance interaction is evidence of a significant moderation effect (for details see Judd et al., 2001).

Results

Descriptive statistics of participants' gender, age and body mass indexes were shown in table 1. Furthermore, paired samples t -tests compared participants' performance, rating of perceived exertion; heart rate and heart rate variability from high- to low-identifiability conditions (see Table 1).

TABLE I
Means and standard deviations for the low- and high-identifiability conditions for performance, rating of perceived exertion, heart rate, heart rate variability, body mass index and age.

Measures (<i>n</i> =66; 27 women, 39 men)	Identifiability	
	High	Low
	\pm (SD)	\pm (SD)
Performance (Number of Shuttles)	79.94 (21.80)	77.62 (21.60)
RPE	9.21 (1.80)	9.45 (1.50)
HR (bpm)	171.25 (17.35)	162.34 (21.95)
r-MSSD (<i>n</i> =32)	59.62 (18.64)	68.12 (15.76)
SDNN (<i>ms</i>) (<i>n</i> =30)	32.23 (17.62)	38.05 (15.66)
BMI	20.49 (2.42)	
Age (years)	18.39 (1.38)	

Notes: *M* = mean; *SD* = standard deviation; RPE= rating of perceived exertion, HR = heart rate, r-MMSD= root mean square of successive R-R intervals; SDNN = standard deviation of NN intervals.

TABLE II
Regression results based on the Judd et al. (2001) procedure for testing within-subjects moderation.

	Mean (SD)	b_0	b_1	<i>t</i>
High-Identifiability (\hat{Y}_1)	79.94 (21.80)	101.23	-2.86	-3.02*
Low-Identifiability (\hat{Y}_2)	77.62 (21.60)	96.01	-1.95	-1.96†
$\hat{Y}_1 - \hat{Y}_2$ difference	2.31 (7.32)	-5.22	.91	2.83*

Notes: b_0 = Y intercept; b_1 = Unstandardized beta coefficient; Based on the Judd et al. (2001) within-subjects moderation Procedure, a significant $\hat{Y}_1 - \hat{Y}_2$ difference score is evidence that narcissism is a significant moderator.

*= $p < .01$, †=.054

PERFORMANCE

Regression analyses (Judd et al., 2001) were used to examine the potential moderating effects of narcissism (*N*) on the performance of 20-meter shuttle run test on two occasions; first under high-identifiability and the second under low-identifiability. Regressing high-identifiability and low-identifiability performance outcomes on narcissism yielded (\hat{Y}_{1i}) = 96.01 - 1.95 N_i and (\hat{Y}_{2i}) = 101.23 + 2.86 N_i , respectively. Narcissism was a significant predictor of performance under low-identifiability ($t_{64} = -1.96$, $p = .001$). Under high-identifiability conditions the slope for narcissism was significantly different from zero, $t_{64} = 2.82$, $p = .006$. Regressing the performance difference, Y_d (i.e., $Y_1 - Y_2$), on narcissism yielded (\hat{Y}_{di}) = -5.22 + .91 N_i . The slope for narcissism was significantly different from zero, $t_{72} = 2.82$, $p = .006$. The test of whether this slope differs from zero is equivalent to showing that the

slope for narcissism in the Y_2 equation differs from the slope for narcissism in the Y_1 equation. This significant Narcissism \times Performance interaction shows that narcissistic experienced significantly greater decreases in performance from high- to low-identifiability performance conditions (see Figure 1).

Discussion

The aim of the present study was to investigate narcissism as a modera-
tor under an individual (high-identifiability) and a team (low-identifiability)
performance conditions with an endurance performance task, namely the
20-meter shuttle run test. Results revealed that narcissists performed better

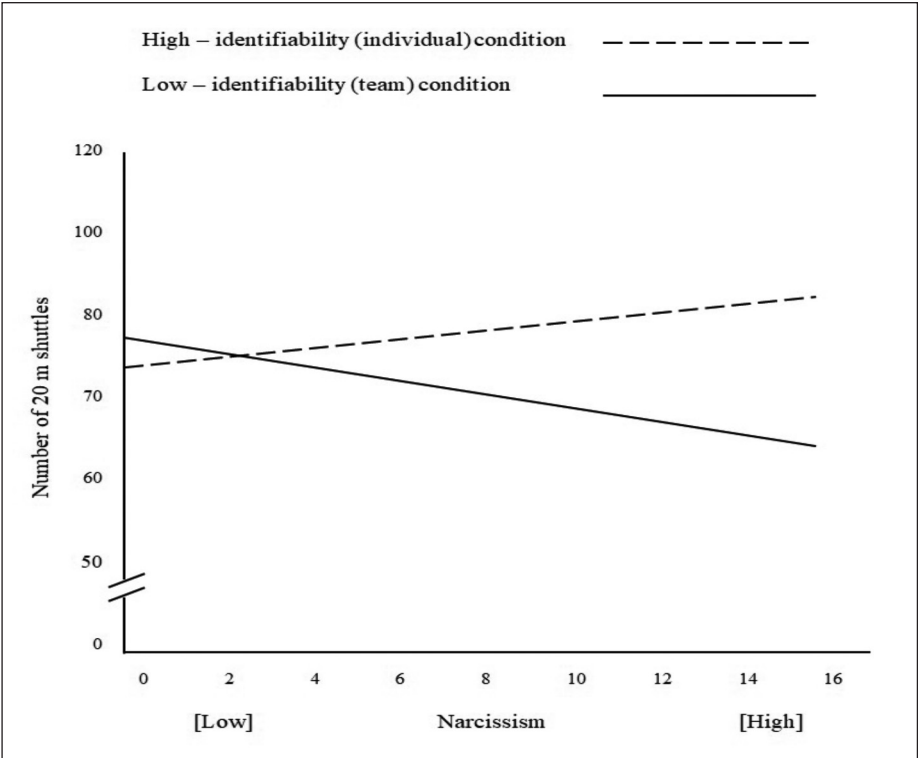


Fig. 1. - Regression slopes for performance under high- and low- identifiability conditions regressed on narcissism as presented in Table 2; a significant narcissism \times identifiability interaction for performance (i.e., number of 20-meter shuttles).

when there was an opportunity to publicize their performance and personal glory. This result supports the vast majority of within-person narcissism research (Woodman et al., 2011; Wallace & Baumeister, 2002). On the other hand, performers who reported low in narcissism, their performance did not change from individual to team performance conditions as they always give themselves as much as they can to make their best effort while running. Further, narcissism moderated the relationship between performance and social loafing, in that when narcissism was high, the performance had a significant relationship with social loafing, but when narcissism was low, the performance had no relationship with social loafing. This is perhaps not surprising, as narcissists do not perform well when facing the situation that does not provide such an opportunity for their personal glory.

Wallace and Baumeister (2002) speculated that when self-enhancement opportunity is high, participants' effort would increase for narcissist individuals to perform better under such conditions. Research provides support for Wallace and Baumeister's (2002) notion that is Woodman and colleagues' (2011) investigation of narcissism and social loafing with cycling performance in laboratory settings. In a sense, the latter aim of the present study was to replicate the findings from Woodman and colleagues (2011) with a more ecologically valid manner. First, in their investigation participants were undergraduate kinesiology students, and they performed ergometer cycling tasks. Therefore, the laboratory-based nature of the task means that the generalizability of the findings to other team and competitive settings are somewhat limited (Woodman et al., 2011). We adopted this competitive endurance performance test to the field with those who were university candidates and they were about to do the same task for the university entry exam. Particularly, these participants were naturally motivated to do the task (e.g., because they want to achieve the test to be a university student) in terms of the generalizability and robustness of their actual performance. Second, researchers (Woodman et al., 2011) asked participants to perform under two conditions; one was under high-identifiability within the team settings and the second one was under the low-identifiability condition within the team settings again. This lacks the ecological validity and the generalizability of the findings to team sports as there is shared personal glory within the team settings. More specifically, narcissists would like to feel personal glory on team's success (e.g., our team won the competition because of me). Therefore, in the current study, we tested participants under both individual conditions (e.g., high identifiability) and under team conditions (e.g., low identifiability) separately to provide an opportunity for – and differentiate – personal glory from no (or low) personal glory. In this way, we were able to test and com-

pare participants' individual scores under both conditions. Future research should benefit from further exploration of differences in individual performance outcomes in relation to group dynamics and functioning. Lastly, the main issue pertains to the data analysis strategy in Woodman et al.'s (2011) investigation that is dichotomizing the continuous variables which may cause a loss of power selection of arbitrary cut-offs and the creation of sample-specific groups. In the present study, we addressed this issue by applying the Judd et al. (2001) within-subjects regression procedure to examine the potential moderating effect of narcissism on performance under two different conditions (e.g., low-identifiability and high-identifiability).

Overall, Woodman and colleagues (2011) found that narcissistic performed better and cycled on an ergometer cycle on average one kilometer further under the conditions of the high-identifiability than in the low-identifiability. Interestingly, the performance of low narcissists did not change across such conditions. In line with Woodman and colleagues (2011), the present research revealed that narcissists' HR was higher in individual performance condition than team condition that is in line with the results emanating from Woodman and colleagues (2011) investigation. Furthermore, participants' RPE did not change from team to individual performance conditions in the present study. In contrast, Woodman et al.'s (2011) study found a significant change in RPE with their investigation from low to high-identifiability conditions. Beattie and colleagues (2017) stated that "individuals with high levels of narcissism may only report that they are investing less effort, but in reality, they may invest just as much effort as everyone else" p. 201. For better control of this scenario, we supplemented our self-report measure of effort, namely the RPE with a measure of HRV. HRV measurement aimed to verify whether participants with high levels of narcissism accurately report the amount of effort they claim to invest or not. This is because HRV is influenced by the autonomic nervous system (via sympathetic and parasympathetic branches) with several studies associating an increase in mental effort and workload with decreases in HRV (Aasman, Mulder, & Mulder, 1987; Capa, Cleeremans, Bustin, Bouquet, & Hansenne, 2011; Mulder, 1992). Although our results revealed that participants' HRV did not change significantly from individual to team performance settings, the only high narcissistic group performed better when the opportunity was available for their personal glory. Previous research has shown that individuals higher in narcissism are more likely to use such techniques to under report the amount of effort invested in a specific task that called self-handicapping (Rhodewalt, Tragakis, & Fennerty, 2006). Lastly, we also measured participants BMI in order to create homogeneous groups in terms of their physical level (see table 1). Therefore,

both groups showed an equal level of BMI which means they were all physically very active participants.

Although the present data add to emerging literature (e.g., Roberts et al., 2010; Woodman et al., 2011; Wallace & Baumeister, 2002) that shows the degree of narcissism effects performance under different conditions, there are other approaches to help individuals with high level of narcissists. For example, researchers (Roberts et al., 2012) investigated the narcissism and effectiveness of psychological skills and found that psychological skills depend on an individual's level of narcissism. Primarily, relaxation was associated with an increase in narcissists' performance. Other psychological techniques should also be investigated in order to advance our understanding of the influence of individual difference on sporting performance (Barlow et al., 2016; Gorgulu, 2019; Woodman, Barlow, & Gorgulu, 2015). Beattie and colleagues (2017) suggested that when working with an individual (e.g., an athlete) high in narcissism, it may be beneficial to encourage them to consider all objective feedback, to potentially improve self-regulation and discourage the attribution of subpar effort, especially in a team environment. Finally, future research on narcissism and psychological skills use could make a notable contribution to the broader literature on group-team cohesion (Carron, Widmeyer, & Brawley, 1985) and team roles (e.g., Eys, Beauchamp, & Bray, 2006; Eys, Evans, Ohlert, Wolf, Martin, & Van Bussel, 2015).

The present study appears to be an advancement of previous research; however, it is not without its limitations. First, although we took steps to minimize problems associated with participants' understanding, we observed that it was somehow difficult for the participants to pay attention and respond to the displayed the RPE scale while running back and forth on a 20-meter course that is one of the main limitations of the current study. Second, although we found a significant condition \times performance interaction with high in narcissism, our participants were university candidates who were about to take a practical university entry test individually. Therefore, they would perform as much as they can under such conditions without feeling responsible for the team, as there is no team for university entry test. The opportunity for the self-enhancement may not have been enough to motivate participants to invest effort. Therefore, future research should improve this by an exploration of narcissism with independent participants in relation to group dynamics. Therefore, this could have implications for applied practice in terms of selecting or deselecting players to fit the needs of a particular team or competition environment. For example, examining the effects of narcissism on team resilience and individual resilience seems worthwhile in future. Thus, future research may wish to consider retesting the potential

moderating effect of narcissism on the relationship between social-loafing and performance with a more pronounced opportunity for self-enhancement under different conditions design (e.g., low and high identifiability for glory). Moreover, although commonly used, the self-report assessment of narcissism that relied on the scale (the NPI-16) received criticism of what they measure (Ackerman et al., 2011). Future research should consider incorporating additional methods of measuring sub-dimensions of narcissistic grandiosity and vulnerability that would be more meaningful for further understanding (Manley, Roberts, Beattie, & Woodman, 2018), primarily the construct of narcissism and its relationship with performance.

Implications and Conclusion

In conclusion, the results from the present study provide seminal evidence that the level of narcissism can be an indicator of performance associated with a team or individual context in sport. By assessing performance under different conditions, we also revealed nuanced aspects of the complex physical performance and narcissism relationship. Finally, and critically, the present study offers a more robust methodological path in the pursuit of a better understanding of the narcissism and performance relationship in sports. We hope that coaches, sport psychologists and practitioners should benefit from the current results that have some implications with regard to team functioning and group dynamics.

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