

Unveiling anger and aggression in sports: The effects of type of sport, competitive category and success level¹

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ABSTRACT: Few studies have explored anger, aggression and antisocial behaviour in sport competition. Therefore, this study intends to analyse the patterns of association between aggression-related variables, and the effect of type of sport, competitive categories and success levels. Two hundred and thirty one athletes from different types of sport completed measures of anger, aggression, anti-social behaviour, anger rumination and provocation. Results provided support for the link between anger, aggression and anti-social behaviour, as well as the importance of provocation and anger rumination in aggressive behaviours. Additionally, athletes from sports with higher levels of physical contact and from lower or younger competitive categories tended to be more aggressive than those from sports with lower levels of contact and from higher competitive levels. However, results failed to demonstrate any significant differences considering the achievement level. These findings provide an important basis to understand individual differences in aggressive-related variables.

Although the study of aggression has always raised the attention of the sport psychology literature, this phenomenon has been systematically forgotten, especially concerning its social and personal impact and influences (Sáenz et al., 2014). In fact, it seems that the interest and importance surrounding aggression in sport do not lead to a more systematic research (Kimble, Russo, Bergman, and Galindo, 2010).

Moreover, the definition of aggression in sport contexts is also a major point of controversy because research still fails to agree on what exactly constitutes aggression (Kerr, 2008; Maxwell and Moores, 2008). To overcome these problems, Maxwell and Moores (2007) suggested a focus on its most important antecedents: anger and aggressiveness. Whereas aggressiveness reflects “dispositions to become aggressive or acceptance of and willingness to use aggression” (p. 182), “anger can be triggered by a multitude of events that may occur externally (e.g., threatening language from an opponent or poor officiating) or internally (e.g., negative self-talk related to poor performance and memories of past defeat)” (Maxwell, Visek, and Moores, 2009, p. 289). Nevertheless, although anxiety is probably the most studied discrete emotion in sport competition, anger is also one of the most experienced emotions in sport, both co-occurring many times with other emotions throughout the competitive process (for a recent review on the topic, see Dias, Corte-Real, Cruz, and Fonseca, 2013). Initially, Lazarus (1991,

2000; see also Cruz and Barbosa, 1998) conceptualized anger as one of the discrete and negative toned emotions that arises when the individual’s ego-identity is at stake, namely under a condition of treat appraisal. Along with this operationalization is what Lazarus (2000) conceptualizes as the core relational theme of anger: “a demeaning offense against me and mine” (p. 234). So, from this point of view, aggressive behaviour is one of the most important consequences of anger in sport (Maxwell and Moores, 2007; Maxwell and Visek, 2009; Maxwell, et al., 2009).

As suggested by a recent body of sport research, but also in mainstream psychology (e.g., Denson, 2013), aggressive behaviour can be reflected in different aspects of sport competition, involving different constructs or processes (e.g., anger, aggressiveness, antisocial behaviour, anger rumination and provocation). So, toward a better understanding of this phenomenon, this study also involves the analysis other variables that have been pointed out as highly associated with aggression in sport. In fact, another way to look at aggression is to analyse anti-social behaviour, according with the more general social cognitive theory of moral standards, prosocial behaviour and action (Bandura, 1999). For example, Kavussanu and Boardley (2009) conceptualize anti-social behaviours towards teammates and opponents in sports as voluntary actions with the intent to harm or disadvantage another individual, and are strongly associated with anger and aggressiveness (e.g., Kavussanu, Stanger, and Boardley, 2013).

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¹ The present study was part of a broader and continuous research project around the construct of aggression and aggressiveness in sport, with several different and very specific purposes and aims. Additional data was collected but was unrelated to the specific questions examined in this study. A portion of the data from the sub-sample of this study was also included in a paper by Sofia & Cruz (2015) and another paper submitted to other journal, with other unique theoretical and empirical research. Nevertheless, none of the analysis presented here were presented in such papers, neither previously reported nor submitted. As such, the current article, in its aims and results, make an unique contribution to aggressive behaviour in sport, with no overlapping in terms of data or research aims. As such this study satisfies the APA guidelines regarding duplicate publication.

Recently, Tractlet, Moret, and Ohl (2015) reported a stronger tolerance to use instrumental aggression and weaker refusal to use hostile aggression in ice hockey compared with soccer.

In addition, aggressive athletes often seem to engage in anger rumination (Maxwell, 2004; Maxwell et al., 2009), which refers to the tendency to repeatedly think about past experiences of anger (Denson, 2013). Other studies observed that anger rumination is one of the most important antecedents of aggression and can even increase the duration and intensity of anger, potentially increasing aggressive behaviour (e.g., Bushman, 2002; Denson, 2013; Denson, Moulds, and Grisham, 2012; Maxwell, 2004).

Within the antecedents of aggression in sport, provocation has also been consistently reported in the literature (e.g., Maxwell, 2004). Provocation can be defined as any interpersonal behaviour that is perceived by the victim as unpleasant or aversive and can trigger anger, frustration and fear (Maxwell et al., 2009).

Among the research about aggression in sport, a small set of studies have centred on investigating the effects of type of sport and competitive levels or categories on aggressive behaviour in sports, but have not reached a consensual conclusion. For instance, some studies found that the lower competitive levels tend to use more hostile aggressive (e.g., Coulomb-Cabagn and Rasclé, 2006) and show higher levels anger, aggressiveness, and provocation (Maxwell et al., 2009). However, Visek and Watson (2005) found that perceived legitimacy of aggression and attitudes of professionalization increased with age, as well as with competitive level. Some other investigations focused on the effects of different levels of physical contact on aggressive behaviour also showed some contradictory results (e.g. Guilbert, 2006; Keeler, 2007; Maxwell et al., 2009). Additionally, few studies have explored the relationship between performance or sports success and aggressive behaviour, but contradictory results were also evident (e.g., Engelhardt, 1995; Mudimela, 2010).

Therefore, aggressive behaviour can yield many forms and involves different processes and dimensions, and should not be studied from a unidimensional perspective. In this sense, the present study intended to explore the relationships between a “constellation” of constructs that seem to surround aggression in sports, namely, anger (including its expression and control), aggressiveness, antisocial behaviour, anger rumination and provocation. Additionally, considering the lack of studies that have explored the differences across type of sport, namely, those reflecting different levels of physical contact, as well as competitive categories and success level, the current study aims to explore and clarify such differences.

Method

Participants

Participants in the current study were 231 athletes (26.4% females) ranging between 15 and 39 years old ($M = 22.13$, $SD = 6.39$) from sports involving diverse physical contact levels, namely, roller hockey ($n = 63$, 27.3%), rugby ($n = 46$, 19.9%), volleyball ($n = 34$, 14.7%), indoor soccer ($n = 21$, 9.1%), basketball ($n = 8$, 3.5%), handball ($n = 23$, 10%), martial arts ($n = 21$, 9%), kickboxing ($n = 2$, 0.9%), boxing ($n = 1$, 0.4%) and greco-roman wrestling ($n = 11$, 4.8%). Additionally, these athletes were from different competitive categories, specifically: senior ($n = 133$, 57.6%), junior ($n = 49$, 21.2%) and juvenile ($n = 38$, 16.5%).

Instruments

Competitive Anger and Aggressiveness Scale (CAAS). This scale was developed by Maxwell and Moores (2007) to assess competitive anger and the acceptance of using aggression in sport (aggressiveness) and was adapted to the Portuguese language by Sofia and Cruz (2012). It includes 12 items answered in a five-point Likert scale ranging from 1 (almost never) to 5 (almost always), divided into two subscales: aggressiveness (six items) and anger (six items). The aggressiveness subscale refers to the acceptance and willingness to use physical and verbal abuse to gain competitive advantages whereas the anger subscale describes anger incidents associated with the frustration caused by losing points or games. Reliability analysis revealed appropriate Cronbach's α : .81 for aggressiveness and .81 for anger.

Antisocial behaviour towards opponents and towards teammates. These constructs were measured using the subscales of antisocial behaviour from the Prosocial and Antisocial Behavior in Sport Scale (Kavussanu and Boardley, 2009). The antisocial behaviour toward teammates subscale includes four items reflecting verbal aggression whereas the antisocial behaviour toward opponents includes eight items reflecting verbal and physical aggression. Reliability analysis in this sample showed the good psychometric characteristics of the antisocial behaviour toward opponents ($\alpha = .84$) and toward teammates subscales ($\alpha = .71$). Athletes answered on a 5-point Likert scale from 1 (never) to 5 (almost always), higher scores reflecting more involvement in antisocial behaviour.

Anger rumination. Anger rumination was measured using the Anger Rumination Subscale from the Displaced Aggression Questionnaire (Denson, Pedersen, and Miller, 2006). This subscale includes 10 items, which reflect the frequency of involvement in anger rumination, answered on a 7-point Likert scale ranging from 1 (extremely uncharacteristic of me) to 7 (extremely characteristic of me). This instrument revealed a Cronbach's α of .93 in the current sample.

Provocation Scale. This measure was developed for this study to assess how often athletes are provoked during sport competition by opponents, teammates, and/or referees/judges. This scale is anchored on a 5-point Likert scale ranging from 1 (never) to 5 (almost always). It includes 6 items and has shown appropriate reliability levels ($\alpha = .73$) in this sample. Scores are obtained by summing the items and higher levels reflect a higher frequency of provocation.

Aggressive Behaviour Scale. This scale was developed to assess some aggressive behaviours not usually included in other scales. The development of these items considered recent studies on anger and aggression in sport (e.g., Maxwell, 2004; Maxwell et al., 2009; Maxwell and Visek, 2009). It includes 7 items and showed a good reliability level ($\alpha = .74$). The total score is obtained by summing the items, in which higher scores reflect more self-reported aggressive behaviour, on a 5-point Likert scale from 1 (never) to 5 (almost always).

State/Trait Anger Expression Inventory (STAXI-2). This scale was developed by Spielberger (1999) to assess, with both trait and state versions, the disposition, expression and control of anger. This study used the Portuguese version of the STAXI-2 (Marques, Mendes, and De Sousa, 2009). Given the cross-sectional nature of this study, the state version was not used. This scale includes the subscale of trait anger (T-Anger) and 4 additional subscales reflecting the external (AX/Out) and internal (AX/In) expression of anger, and the external (AX/Cont-Out) and internal (AX/Cont-In) control of anger. All the subscales

demonstrated good reliability levels in this sample: T-Anger ($\alpha = .84$), AX/In ($\alpha = .69$), AX/Out ($\alpha = .74$), AX/Cont-In ($\alpha = .80$) and AX/Cont-Out ($\alpha = .82$). Items were rated on a 4-point Likert scale, ranging from 1 (never) to 4 (always). Higher scores reflect a higher tendency to experience, express and control anger.

Procedures

After explaining the aims of the study and providing their consent (as well as their parents if they were younger than 18 years old), athletes were given the questionnaire containing several self-report measures presented in a random order to participants. Athletes completed the self-report measures, as well as other measures as part of a wider research project around the anger and aggressiveness constructs, used in additional studies with very different and specific goals. Each athlete was given one individual envelope, which were collected at their club or team training facilities by the first author of the study. The authors' institutional scientific committee granted the ethical approval for this study. Additionally, this study was conducted in accordance with the ethical guidelines of the Helsinki declaration and its revisions, as well as with ethical and deontological guidelines of the National and European Psychologists' Associations.

Results

Data Analysis

Pearson correlation analyses were performed to explore the pattern of relationships between the variables in study. Subsequently, multivariate analyses of variance (MANOVA's) were conducted to explore the differences between level of contact, competitive categories and success levels. Because the correlation analysis showed the presence of multicollinearity between anti-social behaviours towards opponents and provocation ($r = .74$), this last variable was removed from the final analyses (Tabachnick and Fidell, 2007).

Pearson correlations

Table 1 shows Pearson correlations among the variables in the current study. Overall, results showed a pattern of positive associations, except for the subscales of anger control, which showed negative relationships. Associations ranged from weak to moderate, except for the relationships between anti-social behaviours towards opponents and aggressive behaviour ($r = .69$), provocation ($r = .74$) and aggressiveness ($r = .62$), which showed strong associations. Likewise, strong relationships were also found between the subscales of control of the expression of anger ($r = .69$).

Table 1
Person Correlations among the Variables in Study
Note. * $p < .05$; ** $p < .01$; *** $p < .001$

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------------------------|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| CAAS | | | | | | | | | | | | |
| 1. Anger | 1 | .48*** | .33*** | .23** | .31*** | .30*** | .33*** | .57*** | .24*** | .46*** | -.29*** | -.27*** |
| 2. Aggressiveness | | 1 | .62*** | .23** | .44*** | .58*** | .11 | .42*** | .15* | .49*** | -.32*** | -.21** |
| Anti-social behaviour | | | | | | | | | | | | |
| 3. Towards opponents | | | 1 | .23*** | .74*** | .69*** | .13* | .36*** | .16* | .40*** | -.26*** | -.14* |
| 4. Towards teammates | | | | 1 | .29*** | .29*** | .05 | .22** | .06 | .26*** | -.14* | -.16* |
| 5. Provocation | | | | | 1 | .46*** | .20** | .33*** | .17* | .37*** | -.17* | -.14* |
| 6. Aggression behaviour | | | | | | 1 | .06 | .29*** | .13* | .33*** | -.22* | -.10 |
| 7. Anger Rumination | | | | | | | 1 | .50*** | .40*** | .38*** | -.16* | -.16* |
| STAXI-2 | | | | | | | | | | | | |
| 8. T-Anger | | | | | | | | 1 | .34*** | .66*** | -.40*** | -.46*** |
| 9. AX/In | | | | | | | | | 1 | .36*** | -.09 | .01 |
| 10. AX/Out | | | | | | | | | | 1 | -.40*** | -.40*** |
| 11. AX/Cont-In | | | | | | | | | | | 1 | .69*** |
| 12. AX/Cont-Out | | | | | | | | | | | | 1 |

Differences across different physical contact sports

To test the effect of type of sport, two groups were created according to different levels of physical contact, ranging from low to high contact. Specifically, a group of low or moderate contact included athletes from indoor soccer, roller hockey, volleyball and basketball (n = 127), whereas a high contact group included athletes from martial arts, kickboxing, boxing, greco-roman wrestling, rugby and handball (n = 104). The MANOVA showed a significant multivariate effect of type of sport, Wilks' $\lambda = .84$, $F(11, 219) = 3.81$, $p < .001$, $\eta^2p = .16$. Univariate tests revealed significant differences for anger, $F(1, 229) = 4.88$, $p = .028$, $\eta^2p = .02$, antisocial behaviours towards teammates, $F(1, 229) = 5.69$, $p = .018$, $\eta^2p = .02$, aggressive behaviour, $F(1, 229) = 10.40$, $p = .001$, $\eta^2p = .04$ and anger rumination, $F(1, 229) = 5.63$, $p = .019$, $\eta^2p = .02$. These results suggest that athletes from sports with more physical contact tend to report higher antisocial behaviours towards teammates and aggressive behaviour, but also lower levels of competitive anger and anger rumination compared to athletes from sports with moderate and low contact (Table 2).

Table 2
Differences Across Level of Physical Contact

| | Low/Moderate contact | | High contact | | F | p |
|-------------------------------|----------------------|-------|--------------|-------|-------|------|
| | M | SD | M | SD | | |
| CAAS | | | | | | |
| Anger | 25.36 | 7.89 | 23.09 | 7.67 | 4.88 | .028 |
| Aggressiveness | 24.00 | 9.73 | 25.14 | 9.90 | .77 | .381 |
| Anti-social behaviours | | | | | | |
| Towards opponents | 1.61 | .60 | 1.62 | .64 | .01 | .916 |
| Towards teammates | 1.22 | .33 | 1.36 | .50 | 5.69 | .018 |
| Aggressive behaviour | 9.25 | 2.70 | 10.70 | 4.09 | 10.40 | .001 |
| Anger rumination | 36.77 | 13.46 | 32.77 | 11.88 | 5.63 | .019 |
| STAXI-2 | | | | | | |
| T-Anger | 21.20 | 5.63 | 20.84 | 5.28 | .24 | .625 |
| AX/In | 16.72 | 3.73 | 16.33 | 4.00 | .61 | .435 |
| AX/Out | 11.72 | 3.29 | 11.65 | 3.43 | .02 | .876 |
| AX/Cont-In | 18.77 | 3.22 | 18.33 | 3.29 | 1.09 | .298 |
| AX/Cont-Out | 18.23 | 3.43 | 18.27 | 3.44 | .01 | .924 |

Differences across competitive categories

The differences among competitive categories, namely, juvenile and junior (n = 95) and senior (n = 133) athletes revealed a significant multivariate effect of competitive level, Wilks' λ

= .91, $F(11, 216) = 1.89$, $p = .042$, $\eta^2p = .09$. Univariate tests demonstrated significant differences in competitive anger, $F(1, 226) = 7.24$, $p = .041$, $\eta^2p = .02$, anger rumination, $F(1, 226) = 7.28$, $p = .007$, $\eta^2p = .03$, T-Anger, $F(1, 226) = 3.92$, $p = .049$, $\eta^2p = .02$, and AX/Out, $F(1, 226) = 12.99$, $p < .001$, $\eta^2p = .05$, suggesting that juvenile and junior athletes tended to show higher levels of competitive anger and trait anger, and tend to engage more in anger rumination and are more likely to express their anger verbally and physically compared to seniors athletes (Table 3).

Table 3
Differences Across Competitive Categories

| | Juvenile/Junior | | Senior | | F | p |
|-------------------------------|-----------------|-------|--------|-------|-------|------|
| | M | SD | M | SD | | |
| CAAS | | | | | | |
| Anger | 25.57 | 8.44 | 23.41 | 7.36 | 4.24 | .041 |
| Aggressiveness | 25.76 | 10.86 | 23.62 | 9.00 | 2.62 | .107 |
| Anti-social behaviours | | | | | | |
| Towards opponents | 1.66 | .70 | 1.58 | .55 | .95 | .332 |
| Towards teammates | 1.26 | .38 | 1.29 | .45 | .35 | .553 |
| Aggressive behaviour | 9.87 | 3.54 | 9.89 | 3.45 | .00 | .960 |
| Anger Rumination | 37.51 | 12.53 | 32.89 | 12.87 | 7.28 | .007 |
| STAXI-2 | | | | | | |
| T-Anger | 21.86 | 5.29 | 20.41 | 5.57 | 3.92 | .049 |
| AX/In | 17.05 | 3.81 | 16.13 | 3.80 | 3.19 | .076 |
| AX/Out | 12.58 | 3.40 | 11.00 | 3.17 | 12.99 | .000 |
| AX/Cont-In | 18.19 | 3.43 | 18.84 | 3.13 | 2.17 | .142 |
| AX/Cont-Out | 18.01 | 2.91 | 18.39 | 3.78 | .65 | .419 |

Differences across success level

Athletes were also divided into two groups according to the number of self-reported regional, national, or international titles or major achievement (e.g., championships, national records). A group was created with athletes who did not report any titles and/or only reported regional level titles (n = 137) and another group with those who reported national and/or international championship titles and/or were record holders in their respective sport (n = 94). Results failed to reveal a significant multivariate effect, Wilks' $\lambda = .97$, $F(11, 219) = .91$, $p = .529$, $\eta^2p = .04$, although univariate tests revealed significant differences for antisocial behaviour towards teammates, $F(1, 229) = 4.08$, $p = .045$, $\eta^2p = .02$, suggesting that athletes with higher levels of success and achievement tend to display less antisocial behaviours towards their teammates as measure by self-reported titles (Table 4).

Table 4
Differences Across Success Levels

| | No titles/Regional | | National/International | | F | P |
|------------------------|--------------------|-------|------------------------|-------|------|------|
| | M | SD | M | SD | | |
| CAAS | | | | | | |
| Anger | 24.45 | 7.74 | 24.17 | 8.06 | .07 | .786 |
| Aggressiveness | 24.12 | 9.79 | 25.10 | 9.85 | .55 | .458 |
| Anti-social behaviours | | | | | | |
| Towards opponents | 1.59 | .58 | 1.64 | .67 | .31 | .578 |
| Towards teammates | 1.33 | .46 | 1.22 | .35 | 4.08 | .045 |
| Aggressive behaviour | 9.85 | 3.39 | 9.98 | 3.59 | .08 | .781 |
| Anger Rumination | 34.91 | 12.85 | 35.06 | 13.04 | .01 | .934 |
| STAXI-2 | | | | | | |
| T-Anger | 21.36 | 5.20 | 20.57 | 5.83 | 1.16 | .282 |
| AX/In | 16.51 | 4.02 | 16.60 | 3.61 | .03 | .859 |
| AX/Out | 11.60 | 3.26 | 11.82 | 3.49 | .25 | .619 |
| AX/Cont-In | 18.62 | 3.09 | 18.50 | 3.50 | .07 | .785 |
| AX/Cont-Out | 18.20 | 3.42 | 18.33 | 3.46 | .08 | .778 |

Discussion

The purpose of this study was to analyse the relationships between aggression and related constructs, namely, anger, aggressiveness, antisocial behaviour, anger rumination, and provocation, as well as to explore the differences in these variables across sports with different levels of physical contact, competitive categories and success levels. Overall, results demonstrated a positive relationship between anger, aggressiveness, general aggressive behaviour, antisocial behaviour towards opponents and teammates and the experience and expression of anger. These findings support the widely acknowledged link between anger and other antisocial constructs in sports (e.g., Kavussanu et al., 2013; Maxwell et al., 2009; Maxwell and Moores, 2007; Maxwell and Visek, 2009), and are also consistent with those found by Kavussanu and colleagues (e.g., Kavussanu et al., 2013; Kavussanu and Boardley, 2009), suggesting a strong relationship between anger and aggressiveness and antisocial behaviours in sports, both towards opponents and teammates.

Furthermore, provocation and anger rumination were positively associated with aggressiveness, general aggressive behaviour and anti-social behaviour towards opponents, demonstrating the importance of considering these variables or dimensions on the study of aggressive behaviour in sport (Maxwell, 2004; Maxwell et al., 2009). However, antisocial behaviour towards teammates was not associated with anger rumination, which may indicate that rumination increases the likelihood of aggression towards opponents, but not towards teammates. Ultimately,

this suggests that ruminative contents are related to incidents involving opponents or other members of the competition (e.g., coaches, judges, referees). In addition, antisocial behaviour towards teammates was not associated with the internalization of anger experience. The differential pattern of associations of antisocial behaviour towards opponents and teammates suggests that these types of behaviours may reflect different experiences of anger. From a theoretical point of view, this further supports the importance of considering the differences between these types of antisocial behaviour (Kavussanu and Boardley, 2009).

Additionally, the control scales of anger were negatively associated with all the measures in this study (except the internalization of anger) consistently with the results found by Maxwell and colleagues (2009), suggesting that athletes higher in anger control (both internal and external) seem to experience and express less anger and show less aggressive and antisocial behaviour towards opponents and teammates. In a similar way, Bolgar and colleagues (2008) also found that athletes with higher levels of anger control tended to show less angry outbursts.

Moreover, this study also explored the differences in these constructs across different levels of physical contact. It was found that athletes from the low/moderate contact group tend to report less antisocial behaviours towards teammates and aggressive behaviour, but higher levels of competitive anger and anger rumination compared to athletes from sports with high contact. Other studies have found that athletes from sports with more physical contact tend to be more aggressive (e.g., Guilbert, 2006; Maxwell et al., 2009). However, these results are not consistent with previous studies regarding anger and anger rumination (e.g., Maxwell et al., 2009; Maxwell and Moores, 2007). One possible explanation for these findings lies in the central role of key processes (e.g., self-control, coping strategies) in the regulation of aggression in sport (e.g., Sofia and Cruz, 2015, 2016). Although athletes from sports with lower contact have higher levels anger and aggression, they seem to be better at controlling their aggressive behaviour. This raises an important line for future theory and research, which should focus on further understanding the role of self-regulatory processes on aggression in sport.

Regarding the differences across competitive levels, juvenile and junior athletes tended to show higher levels of competitive anger and T-Anger, anger rumination AX/Out (Table 3) compared to seniors. These results seem to be consistent with the idea that more advanced and skilled athletes are better at controlling their anger and aggression (e.g., Coulomb-Cabagno and Rasclé, 2006). As suggested by Maxwell et al. (2009), as well as a vast amount of literature (see Cruz and Barbosa, 1998; Dias, Cruz, and Fonseca, 2012; Gould, Finch, and Jackson, 1993; Lazarus, 2000), more experienced athletes may learn coping skills through experience, allowing them to deal efficiently with their more "hot" emotions.

Finally, this study also intended to analyse the potential effects of aggression on "performance", measured with indirect self-reported indicators of sport success. Results demonstrated that international and/or national champions did not differ from athletes without and/or only with regional titles. However, a significant difference was found in antisocial behaviour towards teammates, suggesting that athletes with higher athletic success tend to show less antisocial behaviours towards teammates. Presumably, particularly in team sports, this seems to support the consensual idea that team cohesion can play a central role and is highly important for sports performance (e.g., Carron, Colman, Wheeler, and Stevens, 2002). However, the relationship between

aggression and performance or success is far from simple and still remains controversial (e.g., Kimble et al., 2010).

Because results about the impact of aggression on performance and/or success remain inconsistent, future studies should focus on the systematic investigation of this relationship, but also on the association of the combined effect of anger with other associated emotions (e.g., anxiety, guilty, shame). In addition, it has been suggested that anger can be used instrumentally in order to obtain a benefit or achieve a goal (e.g., Lane, Beedie, Devonport and Stanley, 2011) and can potentially be beneficial for performance (e.g., Ruiz and Hanin, 2011), which should also be an important line for future research. Additionally, a focus on the dynamical and changing processes involved in such emotional experiences toward a deeper knowledge of these constructs, as suggested by several authors (e.g., Dias et al., 2013; Lazarus, 2000) must merit additional research efforts in the future.

Overall, these findings provide a preliminary, but also an important empirical and conceptual contribution to the comprehension of anger and aggression in sport. It seems that athletes from sports with more physical contact, and those from lower competitive categories (also younger and/or less experienced), tend to be more aggressive. However, the cross sectional characteristics of the study, as well as the fact that it

relied on self-report measures constitute important limitations that should be accounted for. For instance, the inclusion of more gender balanced samples or groups, the use observational and other informant-reported measures, as well as employing mixed-research designs or diary studies can offer new insights on this phenomenon. Finally, the current study points out the need for more precision and distinction on what is considered, in different sports, illegal or socially legitimized aggressive behaviour or physical contact. These results also seem to suggest the core role of anger rumination and provocation in anger and aggression in sport, which are undoubtedly central processes that should be more deeply studied.

In what concerns applied or practical implications, sports psychologists have currently a very significant “arsenal” of strategies, programs and interventions to implement in daily practice. For example, the use of cognitive strategies to help athletes reevaluate the situation (Brunelle, Janelle, and Tenant, 1999), self-affirmation techniques to “block” their ruminative thoughts (Koole, Smeets, Knippenberg and Dijksterhuis, 1999) or more sound intervention programs, such as rational-emotive therapy strategies (e.g., Turner and Barker, 2014), are only examples that could be useful to reduce aggressive behaviour in the “heat” and pressure of highly competitive situations.

ACLARANDO LA IRA Y LA AGRESIÓN EN EL DEPORTE: EL EFECTO DE LA MODALIDAD, ESCALÓN COMPETITIVO Y NIVEL DE ÉXITO

PALABRAS CLAVE: ira, agresión, conducta antisocial, competición deportiva

RESUMEN: Pocos estudios han explorado la ira, la agresión y los comportamientos antisociales en el deporte. Asimismo, este estudio tiene como objetivo analizar el patrón de asociaciones que siguen las variables relacionadas con la agresión y el efecto que tiene el tipo de deporte, y los niveles de competición y de éxito. Doscientos treinta y uno atletas de diferentes modalidades respondieron a medidas de ira, agresión, comportamiento antisocial, rumia de la ira y provocación. Los resultados apoyan una asociación entre la ira, la agresión, comportamiento antisocial, y la importancia de la rumiación de la ira y la provocación en el comportamiento agresivo. Además, los atletas de modalidades de mayor contacto físico y de categorías competitivas inferiores, juveniles y juniors, tienden a ser más agresivos en comparación con aquellos deportistas de las modalidades con menor contacto físico y de la categoría competitiva senior, respectivamente. Sin embargo, los resultados no mostraron diferencias significativas según el nivel de éxito o suceso. Estos resultados proporcionan una base importante para la comprensión de las diferencias individuales y situacionales en variables de rasgo.

CLARIFICANDO A RAIVA E A AGRESSÃO NO DESPORTO: O EFEITO DA MODALIDADE, ESCALÃO COMPETITIVO E NÍVEL DE SUCESSO

PALAVRAS-CHAVE: raiva, agressão, comportamento anti-social, competição desportiva

RESUMO: Poucos estudos exploraram a raiva, agressão e os comportamentos antissociais no desporto. Assim, este estudo pretende analisar o padrão de associações de variáveis relacionadas com a agressão e o efeito do tipo de modalidade desportiva, categorias competitivas e nível de sucesso. Duzentos e trinta e um atletas de várias modalidades responderam a medidas de raiva, agressão, comportamentos antissociais, ruminação da raiva e provocação. Os resultados suportam a associação entre raiva, agressão, comportamento antissocial, bem como a importância da ruminação da raiva e da provocação nos comportamentos agressivos. Adicionalmente, atletas de modalidades com maiores níveis de contacto físico e das categorias competitivas mais jovens tendiam a ser mais agressivos comparativamente com os de modalidades com menor contacto e atletas séniores. Contudo, os resultados não demonstraram diferenças significativas em função do nível de sucesso. Estes resultados constituem uma importante base para a compreensão de diferenças individuais em variáveis relacionadas com agressão.

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