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Role of Resistive Self-Regulatory Efficacy and Moral Disengagement in the Relationship between Values and Aggressiveness in Athletes

Research Article

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Abstract

This study examined whether athletes' values are related to aggressiveness through self-regulatory mechanisms. Athletes (*N=225*) completed four questionnaires to assess their values, resistive self-regulatory efficacy, moral disengagement and aggressiveness.

The results of structural equation modeling showed a good fit to the data and illustrated that: (a) The status and moral values were indirectly associated with aggressiveness through the mediating roles of resistive self-regulatory efficacy and moral disengagement, (b) Status values was negatively associated with resistive self-regulatory efficacy and positively with moral disengagement, whereas moral values was positively associated with resistive self-regulatory efficacy and negatively with moral disengagement, and (c) Resistive self-regulatory efficacy was negatively linked with moral disengagement, which in turn was positively associated with aggressiveness.

The finding that resistive self-regulatory efficacy and moral disengagement mediate the values-aggressiveness relationship offers new insight into the psychological mechanisms underlying aggressiveness. This study also provides empirical support for Bandura's social cognitive theory of moral thought and action whereby resistive self-regulatory efficacy inhibits transgressive behavior through the mediating influence of moral disengagement. This suggests that athletes' values like status and moral may be significant predictors of these self-regulatory mechanisms.

Keywords: Aggressiveness; Self-Regulatory Mechanisms; Sport; Athletes' Values; Mediation.

Introduction

Aggressiveness in sport has become a major concern for sports psychologists [1]. Aggressiveness refers to the athlete's disposition to behave intentionally to verbally or physically harm or injure an opponent, outside the rules of the game [2, 3]. Theories of aggressiveness have emerged from a wide range of social and psychological perspectives over the past 15 years (for a review see [4-6]). In sports psychology, a number of quantitative studies have utilized self-report measures to examine aggression, particularly to predict the aggressive behaviors of on-field athletes [6]. The early studies essentially emphasized the personal or contextual factors that influence the variables of aggressiveness (i.e., transgressive or antisocial behaviors) [1, 7]. Studies have shown that the variables of aggressiveness depend on the type of sport [8, 9] or the athlete's sex [7, 10]. Others have suggested the contribution of personal factors like ego orientation [11], moral reasoning [12] and values [13] or contextual factors like training methods [14] and competition level [15]. Some authors pointed to the importance of building a coherent framework to investigate the antecedents and mechanisms underlying aggressive and transgressive conduct [16, 17]. Researchers have therefore increasingly focused on the major antecedents of the variables of aggressiveness that characterize the most aggressive athletes in all types of sports [1, 2] and the underlying mechanisms, such as self-regulatory efficacy in resisting transgressive behavior and moral disengagement [18].

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Although the research on the personal and contextual factors of aggressiveness has been substantial, the factors related to the sociocognitive mechanisms need to be further elucidated. The aim of the current study was to examine the association between athletes' values and aggressiveness in sport, and the mediating role of self-regulatory mechanisms.

Self-Regulatory Mechanisms Governing the transgressive Behavior of Athletes

The research findings based on the social cognitive theory of moral thought and action [19] suggest that resistive self-regulatory efficacy and moral disengagement are important constructs for understanding aggressiveness in sport. Bandura's [19] theory assumes that self-regulatory mechanisms involve the capacity to observe, control and judge personal behavior and affective reactions in relation to personal, social or moral standards. Individuals adapt their personal standards of moral conduct according to their experiences and the dominant values of their society; subsequently, they place sanctions on negative and positive actions that respectively violate and conform to their moral standards. Bandura et al., [17] also suggested that strong adherence to moral self-sanctions and prosocial behaviors mediate the inhibitive effect of perceived academic and self-regulatory efficacy on transgressiveness, whereas moral disengagement reinforces transgressive behaviors. In addition, resistive self-regulatory efficacy, which refers to the belief in one's ability to control personal behavior when facing social temptation or pressure to behave transgressively, was found to play a determining role in adolescent transgressive behaviors (physical and verbal aggression, cheating) both directly and indirectly through moral disengagement [17, 20, 21].

Moral disengagement is the self-regulatory process by which individuals cognitively restructure their inhumane conduct, the negative effects of their actions, their role in causing harm, or the targets of their transgressive acts [22]. The direct relationships between moral disengagement and aggressive and/or violent conduct from adolescence to young adulthood have been confirmed by cross-sectional studies [23, 24] and longitudinal research [25]. For example, Capara et al., [25] demonstrated the longitudinal and direct relationships between moral disengagement and violent conduct for young adults over four time periods. They showed that hostile rumination and moral disengagement significantly mediated the relationship between irritability and violence, and that moral disengagement significantly mediated the relationship between hostile rumination and violence. Although much of this research has explored the self-regulation of aggression in social settings/society, the self-regulation of transgressive and violent behavior in sport has been less well-studied. The sports context is a rich and complex dynamic system of rules and values like fair play, loyalty, and cooperation, yet it is well known for the emergence of transgressive behaviors [26, 27]. According to Long, Pantaléon, Bruant and d'Arripe-Longueville [28], a variety of agents (e.g., coaches, referees, partners, opponents, sponsors, and the media) may exert social pressure on athletes to transgress the rules, particularly in competitive situations. According to game reasoning theory, the sports context differs from everyday life in terms of constraints of space, time, values, moral variables and symbolic meaning [29, 30]. Bredemeier and Shields [31] showed that athletes' moral reasoning levels were lower than those of non-athletes in this context. However, both athletes and non-athletes used higher levels of moral reasoning in everyday situations than in sports situations.

Recent studies have taken these factors into account to validate a psychometric instrument to assess moral disengagement [18] and resistive self-regulatory efficacy in athletes [32] in the goal of understanding the sociocognitive self-regulatory mechanisms that underlie aggression and cheating in sports [33]. These authors replicated and extended the models of Bandura et al., [17, 20] to study beliefs about cheating in sport (i.e., judgment of acceptability and likelihood of cheating). Their structural model included the main relationships in Bandura et al.,'s [17] model, and they confirmed the impact of resistive self-regulatory efficacy and social self-efficacy on prosocial behavior and beliefs about cheating through the influence of moral disengagement. Their main findings were that negative affective and resistive self-regulatory efficacy function in harmony to inhibit athletes' moral disengagement and thereby the acceptability and likelihood of cheating.

Although personal values are potential standards that enhance resistive self-regulatory efficacy and inhibit moral disengagement in daily life [17, 19], little attention has been given to the sports context. To date, these sociocognitive self-regulatory variables have not been considered simultaneously in relation to values and aggressiveness in sport, although several studies have reported significant relationships between values and aggressiveness.

Athletes' Values and Aggressiveness

Values can be defined as guiding principles that transcend specific situations and determine individual morality, conduct and vary in importance [34, 35].

In one of the early studies on values, Lee and Cockman [36] identified through qualitative analysis 18 values spontaneously expressed by young athletes in discussions of moral dilemmas in their sport. These authors derived a comprehensive range of 18 discrete values, and they speculated that 16 of them could be classed into five categories: (a) competence values (achievement, conscientious, showing skill, winning), b) self-expressive values (enjoyment, good game, self-actualization), (c) interpersonal values (conformity, obedience, team cohesion), (d) moral values (contract maintenance, fairness, sportsmanship), and (e) social values (caring, companionship, tolerance). This work was followed by the development of the Youth Sport Values Questionnaire (*YSVQ*; [37]) to assess the importance of the 18 sport-specific values extracted from the study of Lee and Cockman [36]. Next, Lee et al., [13] developed the YSVQ-2 from a subset of YSVQ values to assess status, competence and moral value domains.

Several sports psychologists have suggested that athletes' values by their very nature predict social and antisocial attitudes [13] and aggressiveness in sport [4, 38]. For example, Šukys and Jansonienė [39] showed a negative correlation between moral values and moral disengagement, but no correlation between moral disengagement and either competence or status values. Also, female athletes scored higher on moral values than male athletes, but there were no differences in moral disengagement across genders and sports experience. The authors recommended further study to determine whether moral disengagement in sport is a media-

tor in the relationship between athletes' values and their behavior. Furthermore, in Canadian ice hockey, Russell [4] showed that lower conservatism (i.e., violating a moral values of the game) was linked to more physical aggression, defiance of official authority and coaching staffs' ratings of players' aggression. Amateur athletes are therefore expected to adhere to the revised Code of Sport Ethics with regard to such basic principles as fair play, sportsmanship, and voluntary movement to prevent aggressive behavior in sport [40]. Lee and colleagues [13] confirmed that (a) athletes' competence values (e.g., successful, capable, ambitious) directly predict athletes' prosocial attitudes and foster task orientation, (b) moral values (e.g., play by the rules, being helpful, faire play, and sportsmanship) positively predict prosocial attitudes and negatively predict antisocial attitudes, and (c) status values (e.g., authority, dominance, and prestige) predict athletes' antisocial attitudes both directly and indirectly through ego orientation as a mediator. In addition, Albouza et al., [38] demonstrated that high scores on individualistic (e.g., power or achievement) and collectivistic (e.g., benevolence or conformity) basic values respectively had positive and negative predictive influence on aggressiveness in athletes (e.g., physical and verbal aggression, hostility and anger).

The literature thus shows that (a) athletes' values, which by their nature provide trans-situational standards for assessing aggressive behavior [38] and ethical violation, play an important role in aggressiveness preparedness [4, 40], (b) personal values or self-moral standards exert a significant influence on the self-regulatory processes that control aggressive behaviors [17, 19], and (c) self-regulatory processes like moral disengagement may mediate the relationship between athletes' values and their behavior in sport [39].

Altogether, these research findings suggest that athletes' values, especially lower moral values and higher status values, serve as important predictors for variables of aggressiveness in sport [4, 13, 38]. However, little is known about the underlying psychological mechanisms of this relationship.

Questions and Contributions of this Research

The sociocognitive self-regulatory mechanisms governing transgressive behavior in sport have been studied [33] but have never been applied to athletes' aggressiveness. Moreover, although the direct links between values and athletes' aggressiveness have been shown [4, 38], the underlying psychological mechanisms of this relationship are unknown. Bandura's [19] social cognitive theory provides a heuristic framework for investigating these mechanisms. The objective of this study was therefore to examine the mediating role of self-regulatory mechanisms in the association between athletes' values and aggressiveness. Based on the literature, we tested a hypothesized model in which athletes' values are related to aggressiveness both directly and indirectly through resistive self-regulatory efficacy and moral disengagement (see Figure 1).

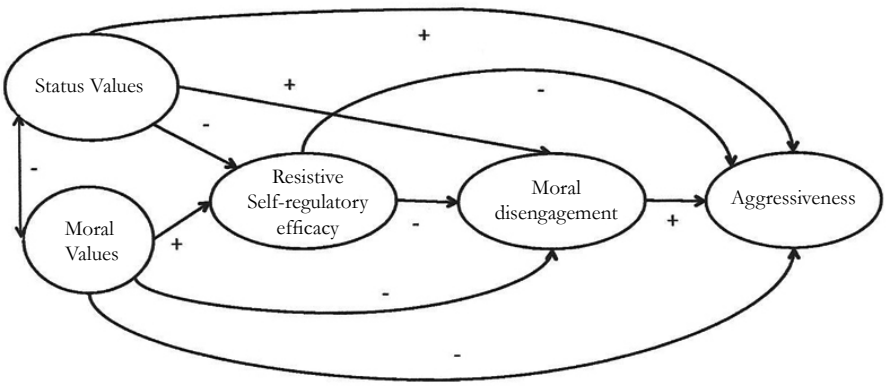
Our literature review suggested that the athletes' sports-oriented status values would be (a) negatively associated with resistive self-regulatory efficacy and (b) positively associated with moral disengagement and aggressiveness. In contrast, moral values (a) would be positively related to resistive self-regulatory efficacy and (b) would negatively predict moral disengagement and aggressiveness. Second, we expected that status values would be positively related to aggressiveness both directly and through the sequential mediation of resistive self-regulatory efficacy and moral disengagement. In contrast, moral values would be negatively related to aggressiveness both directly and through the sequential mediation of resistive self-regulatory and moral disengagement. Last, we hypothesized that athletes' aggressiveness would be negatively related to resistive self-regulatory efficacy and positively related to moral disengagement and that resistive self-regulatory efficacy would be negatively related to moral disengagement.

Method

Participants

The study population was composed of 225 French athletes (114 males and 111 females) in a range of sports (e.g., handball, football, boxing, climbing, and judo), with participants in team sports like handball and football comprising more than 60% of the sample; all played at the national and regional levels (N = 189) or the local level (N = 36). All volunteered to participate in the study, which was conducted in the sports clubs at the time of normal training sessions. The average age of the participants was 19.86 years with a range of 16–29 years (SD = 3.07), and years of practice was 9.73 with a range of 1–18 years (SD = 5.13).

Figure 1. Hypothesized model of the resistive self-regulatory efficacy and moral disengagement mechanisms mediating the impact of the athletes' sports-related values on their aggressiveness.



Measures

Four questionnaires were used to measure the following: (a) athletes' values, (b) resistive self-regulatory efficacy, (c) moral disengagement, and (d) aggressiveness.

Athletes' values

Athletes' sports-related values were assessed using a French version of the YSVQ-2 of Lee et al., [13] including 13 items comprising three subscales: moral (5 items), competence (4 items), and status values (4 items). For examples, "When I do the sport it is important to me that I am a leader in the group" describes an athlete for whom status values is important. "When I do the sport it is important to me that I always play properly" describes an athlete for whom moral values is important. "When I do the sport it is important to me that I use my skills" describes an athlete for whom competence values is important. The items were scored on a Likert scale from "This idea is the opposite of what I believe" (-1) to "This idea is extremely important to me" (5).

The Confirmatory Factorial Analysis (CFA) of this model with three subscales had a good fit to the data (X^2 (62) = 94.27; p = .01; CFI = .96; TLI = .95; RMSEA = .04; CI RMSEA = .02/.06). The CFA revealed that: the moral subscale had a good fit to the data (X^2 (2) = 2.98; p = .22; CFI = .99; TLI = .97; RMSEA = .04; CI RMSEA = .00/.14), the status subscale had a fair model fit to the data (X^2 (4) = 10.79; p = .02; GFI= .98; CFI = .96; TLI = .91; RMSEA = .08; CI RMSEA = .02/.15), and the competence subscale had a poor fit to the data. In this study, the competence values had not been considered. Also, the Cronbach's alpha coefficient of the status and moral scores produced sufficient reliability coefficients (α = .68 and .74, respectively).

Resistive self-regulatory efficacy

Resistive self-regulatory efficacy was evaluated with the validated French version of Bandura, Barbaranelli, Caprara and Pastorelli's Self-Regulatory Scale [22], which was adapted for the sports context by Corrion et al., [31]. Six items measure Resistive Self-Regulatory Efficacy (RSRE; e.g., "How well do you resist the pressure from someone who pushes you to attack an opponent physically?") on a Likert scale from "Not at all capable" (1) to "Totally capable" (6). In this study, the CFA showed that the six-item model was significantly adjusted to the data: X^2 (3) = 5.78; p = .00; CFI = .99; TLI = .98; RMSEA = .06; CI RMSEA = .00/14. The internal consistency of the scale was satisfactory (α = .92).

Moral disengagement

Moral disengagement was assessed with the Short French Questionnaire of Moral Disengagement in Sport (SFQMDS) validated by Corrion et al., [18]. Three items measure Minimization of transgressions and their consequences (MD_1; e.g., "It's not serious if I behave badly [cheating or aggression] when it's to win") and three measure Projection of fault onto others (MD_2; e.g., "It's not my fault if I behave badly [cheating or aggression] because it's my opponent who started it") on a Likert scale from "Do not at all agree" (1) to "Completely agree" (6). The scale produced good reliability coefficients for Minimization of transgressions (α = .90), Projection of fault onto others (α = .78), and total score (α = .88). In the current study, we used only the total score of the moral disengagement scale, which has been used in several empirical studies of athletes' antisocial behaviors like cheating [33] and athletes' values [39]. The CFA showed that the six-item model was significantly adjusted to the data: X^2 (3) = 5.782; p = .00; CFI = .99; TLI = .98; RMSEA = .06; CI RMSEA = .00/.14.

Aggressiveness

Aggressiveness was evaluated with the total scale of the validated French version of Buss and Perry's Aggression Questionnaire [41], which was adapted for the sports context by Pfister, Masse, and Jung [42]. This questionnaire includes 20 items distributed unequally among Physical aggression, Verbal aggression, Anger and Hostility. Physical aggression measures the tendency to be physically aggressive with others or an object (e.g., "If I have to resort to violence to protect my rights, I will"). Verbal aggression measures aggression through verbal expression (e.g., "When people annoy me, I can tell them what I think of them"). Anger measures an individual's feeling of anger (e.g., "I sometimes feel like gunpowder ready to explode"). Hostility assesses the sentiment of hatred against others and life (e.g., "When people are especially nice to me, I wonder what they want"). The participants rated themselves on a 5-point Likert scale for each item: "Extremely uncharacteristic of me" (1) to "Extremely characteristic of me" (5). In the current study, we used only the total score (i.e., aggressiveness), which has been used in several empirical studies of athletes' aggressiveness, impulsiveness and self-esteem [42]. The CFA for the total score showed that the model was significantly adjusted to the data: X^2 (99) = 235.07; p = .00; CFI = .91; TLI = .89; RMSEA = .07; CI RMSEA = .06/.09. The scale produced good reliability coefficients for the total score (α = .92).

Procedure

The research aims and methods were fully explained to the club directors and coaches, who gave permission to recruit participants from among their athletes. The authors' University Human Ethics Committee granted approval for this project prior to commencing the study. Information about the study and consent forms were then distributed to the athletes before training. Athletes under the age of 18 years who returned a signed parental consent form, in line with ethical standards, and who themselves agreed to participate were enrolled. A pilot study suggested that between 25 and 30 min were required to complete the questionnaires measuring values, resistive self-regulatory efficacy, moral disengagement and aggressiveness. The questionnaires were then administered to small groups of five participants, either before or after practice, in designated areas of the clubs. All questionnaire sessions were held in standardized conditions (i.e., small groups, paper, pencils, seating and no communication). The order of the questionnaires was randomized across participants to prevent an order effect.

Standardized information and instructions for the questionnaires were given to ensure optimal conditions and attentiveness on the part of the participants. They were specifically informed of the following: their participation was strictly voluntary, anonymity was ensured, the questionnaires were not tests and therefore there were no right or wrong answers, and the collected data would be used only for research and would remain strictly confidential (i.e., the consent form) with only sex and birth date recorded. All participants were informed of their scores upon request.

Data analysis

First, the descriptive data were analyzed (i.e., means, standard deviations, correlations and Cronbach's alphas). Next, we tested our hypothesized model and examined both direct and indirect relationships between athletes' values and the variables linked to aggressiveness, as mediated by resistive self-regulatory efficacy and moral disengagement, with structural equation modeling (SEM) and the bootstrap method using IBM SPSS Amos 24.0 [43]. SEM analysis provides an appropriate inference framework for mediation analyses [44, 45]. It simplifies testing of more complicated hypotheses with multiple independent variables and mediators in a single analysis [44] and provides model information about the consistency of the fit of the hypothesized mediational model to the data. The direct, indirect (i.e., comprising all direct paths and all indirect paths from one variable to another) and total effects (i.e., comprising the direct paths and all indirect paths) for the structural model were calculated [46]. The different effects and their corresponding 95% CIs were calculated because of it capability to estimate both total and specific indirect effects for multiple mediator models, using bootstrapping and providing bias-corrected (BC) 95% CIs [47]. The number of bootstrap draws was 10,000, as recommended by Hayes [48].

A variable with a no-point estimate within the zero-interval is considered statistically significant. Also, a Z-value can be determined by dividing the bootstrapped estimate by its standard error. Typically, if the Z-value is greater than 1.96 or less than -1.96, it is significant ($p < .05$) and we conclude that the effect is larger than would be expected by chance and is thus significant. The appropriateness of the mediation model must be assessed with global indices of goodness-of-fit to the data. Four indices were employed: chi-square (χ^2), the Root-Mean Square Error of Approximation (RMSEA), the Bentler Comparative Fit Index (CFI), and the Tucker-Lewis Index (TLI). RMSEA values ≤ .08 at 90% Confidence Interval (RMSEA CI 90%) in combination with a value for CFI or TLI ≥ .90 suggest an acceptable model fit [49, 50].

Results

Descriptive statistics and preliminary analyses

Table 1 presents the means and standard deviations for the athletes' values, resistive self-efficacy and moral disengagement scores, and the matrix of correlations between them and the athletes' aggressiveness. Athletes scored moderate to high on resistive self-regulatory efficacy and moral values, and they scored low on status-enhancement, moral disengagement, and aggressiveness. In other words, their responses indicated that they considered moral values in sport to be important and were able to regulate their aggressive behavior, resist peer pressure, and maintain good relationships. They also did not disengage morally or judge aggressive behavior as acceptable and they were not likely to show aggression during training.

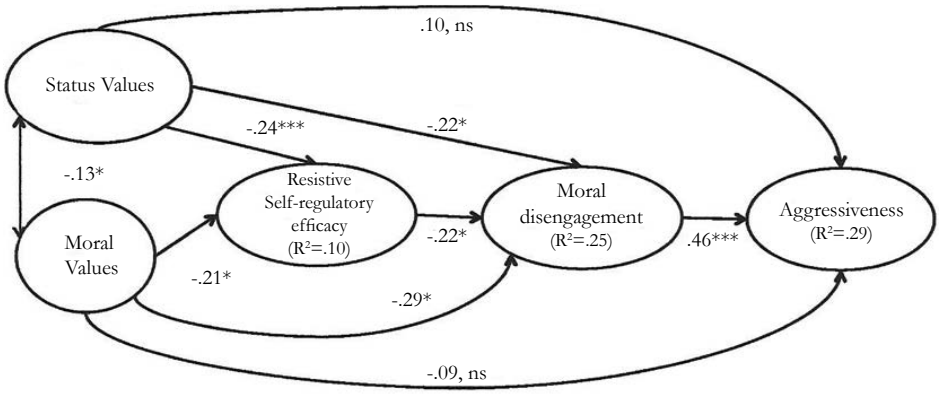
Significant factor correlations ranged in magnitude from low to moderate and were in the theoretically expected directions. Scores

Table 1. Descriptive statistics and internal consistency coefficients of the variables and the matrix of factor correlations (N = 225).

Variables	M	SD	α	SV	MV	RSRE	MD	AG
Status values	2.72	0.94	0.68	1.00				
Moral values	4.80	1.04	0.74	-.13*	1.00			
Resistive self-regulatory efficacy	5.06	1.20	0.92	-.26**	.21**	1.00		
Moral disengagement	2.30	1.17	0.88	.32**	-.36**	-.34**	1.00	
Aggressiveness	2.18	0.79	0.92	.25**	-.27**	-.27**	.52**	1.00

Notes. M: Means; SD: Standard Deviations; α: Cronbach's alpha coefficient, SV: Status Values; MV: Moral Values; RSRE: Resistive Self-Regulatory Efficacy; MD: Moral Disengagement; AG: Aggressiveness. *$p < .05$; **$p < .01$.

Figure 2. Structural model of resistive self-regulatory efficacy and moral disengagement mechanisms mediating the impact of the athletes' sport-related values on their aggressiveness.



Notes. The values of the coefficients between variables are standardized and all relationships are included, for maximal clarity. *p < .05; **$p < .01$; ***$p < .001$; ns: not significant.

Table 2. Total, direct, and indirect effects for the final structural model (*N* = 225).

Type of effects	β[a]	SE[b]	Z[c]	BCa 95% CI [LO –HO][d]	b[e]
Direct effects					
SV→RSRE	-.24***	.06	-4.00	[-.35; -.16]	-.31***
SV→MD	.22**	.06	3.70	[.10; .35]	.27**
SV→AG	.10 *ns*	.07	1.43	[-.03; .23]	.08 *ns*
MV→RSRE	.18**	.07	2.60	[.05; .31]	.21**
MV→MD	-.29***	.07	-4.14	[-.42; -.14]	-.32***
MV→AG	-.09 *ns*	.07	-1.29	[-.21; .04]	-.07 *ns*
RSRE→MD	-.22**	.07	-3.14	[-.37; -.08]	-.21**
RSRE→AG	-	-	-	-	-
MD→AG	.46***	.07	6.60	[.31; .59]	.31***
Specific indirect effects					
SV→RSRE→MD	.05**	.02	2.50	[.02; .11]	.07**
MV→RSRE→MD	-.04**	.02	-2.50	[-.09; -.01]	-.05**
RSRE→MD→AG	-.10**	.04	-2.33	[-.20; -.04]	-.07**
SV→RSRE→MD→AG	.02***	.01	2.00	[.01; .07]	.03***
SV→MD→AG	.13***	.03	4.33	[.07; .21]	.08***
MV→RSRE→MD→AG	-.02**	.01	-2.00	[-.05; -.01]	-.02**
MV→MD→AG	-.15***	.04	-3.75	[-.24; -.08]	-.10***
Total indirect effects					
SV→RSRE→MD→AG, SV→MD→AG	.15***	.04	3.75	[.08; .28]	.11***
MV→RSRE→MD→AG, MV→MD→AG	-.17***	.05	-3.40	[-.29; -.09]	-.12***
Total effects					
SV→AG, SV→RSRE→MD→AG, SV→MD→AG	.25**	.07	3.60	[.09; .35]	.19**
MV→AG, MV→RSRE→MD→AG, MV→MD→AG	-.26**	.07	3.71	[-.37 -.10]	-.19**
SV→MD, SE→RSRE→MD	.27***	.06	4.50	[.15; .40]	.34***
MV→MD, RR→RSRE→MD	-.33***	.07	-4.71	[-.46; -.19]	-.37***
RSRE →AG, RSRE→MD→AG	-.10**	.04	-2.50	[-.20; -.04]	-.07**

Notes. [a]Standardized coefficients; [b]Standard error; [c]Z-value; [d]Lower and upper bound of bias-corrected 95% confidence interval with 10,000 bootstrap samples; [e]Unstandardized coefficients; SV: Status Values; MV: Moral Values; RSRE: resistive self-regulatory efficacy; MD: moral disengagement; AG: Aggressiveness. ** $p < .01$, *** $p < .001$, *ns*: not significant.

for status values and moral values were significantly but differently related to all the other variables. Status values was negatively related to resistive self-regulatory efficacy and positively related to moral disengagement and aggressiveness. Moral values was positively related to resistive self-regulatory efficacy and negatively related to moral disengagement and aggressiveness. Resistive self-regulatory efficacy was also negatively related to moral disengagement and aggressiveness. Last, moral disengagement was positively associated with aggressiveness.

Testing the hypothesized model. The next step involved testing the hypothesized model through SEM analyses. Our hypothesized model tested the relationships between status, moral values and aggressiveness, directly and through resistive self-regulatory efficacy and moral disengagement, and between these two variables. The SEM results showed good fit indices with regard to the hypothesized model: $X^2(1) = 1.72$; $p = .19$; CFI = .99; TLI = .95; RMSEA = .05; CI RMSEA =.00/.19, which explained 29.01% of the variance of aggressiveness. The structural model is presented in Figure 2.

First, as hypothesized, some significant direct effects were found. Status values was negatively related to resistive self-regulatory efficacy ($\beta = -.24$, $SE = .086$, $Z = -4.00$, $p < .001$) and positively to moral disengagement ($\beta = .22$, $SE = .06$, $Z = 3.70$, $p < .001$), whereas moral values was positively associated with resistive self-regulatory efficacy ($\beta = .18$, $SE = .07$, $Z = 2.60$, $p < .01$) and negatively with moral disengagement ($\beta = -.29$, $SE = .07$, $Z = -4.14$, $p < .001$). Resistive self-regulatory efficacy was negatively related to moral disengagement ($\beta = -.22$, $SE = .07$, $Z = -3.14$, $p < .001$), which in turn was positively related to aggressiveness ($\beta = .46$, $SE = .07$, $Z = 6.60$, $p < .001$). However, contrary to our hypothesized model, none of the direct effects of status values ($\beta = .10$, $SE = .07$, $Z = 1.43$, $p = .13$) and moral values ($\beta = -.09$, $SE = .07$, $Z = -1.29$, $p = .19$) on aggressiveness was significant. Similarly, the direct effect of resistive self-regulatory efficacy on aggressiveness was not established. The total, direct and indirect effects for the structural model are provided in Table 2.

As seen in Table 2, the total indirect effect (the difference between total and direct effects) of status values on aggressiveness through resistive self-regulatory efficacy and moral disengagement was statistically significant (β = .15; 95% BCa CI [.08; .28]). We considered the mediating variables separately and together in relation to the indirect effects of status values and found that the mediation of moral disengagement alone (β = .13; 95% BCa CI [.07; .21]) and the sequential-multiple mediation of resistive self-regulatory efficacy and moral disengagement (β = .02; 95% BCa CI [.01; .07]) were significant. Thus, the total indirect effect of moral values on aggressiveness through resistive self-regulatory efficacy and moral disengagement was significant (β = -.17; 95% BCa CI [-.29; -.09]). We also considered the mediating variables separately and together in relation to the indirect effects of moral values and found that the mediation of moral disengagement alone (β = -.15; 95% BCa CI [-.24; -.08]) and the sequential-multiple mediation of resistive self-regulatory efficacy and moral disengagement (β = -.02; 95% BCa CI [-.05; -.01]) were significant. Thus, an indirect effect from resistive self-regulatory efficacy to aggressiveness through moral disengagement was significant (β = - .10; 95% BCa CI [-.20; -.04]). These findings confirmed the significant mediating role of resistive self-regulatory efficacy and moral disengagement in the values–aggressiveness relationships.

Discussion

This study examined the relationships between athletes' values (i.e., status and moral values) and aggressiveness, and the mediating roles of resistive self-regulatory efficacy and moral disengagement mechanisms. Specifically, we used a structural and integrative model to assess the direct and indirect effects of athletes' values on their aggressiveness.

SEM analysis assessed the relative importance of the direct and indirect links of the independent variables (athletes' values) to the dependent variable (aggressiveness). Conversely to our initial correlational analysis and expectations, we found that the athletes' values were not directly related to aggressiveness but were indirectly related through their effects on self-regulatory mechanisms. Significant direct effects of moral and status values on aggressiveness could not be demonstrated, but their influence was evidenced indirectly through resistive self-regulatory efficacy and moral disengagement. This finding differs from previous results obtained from the multiple regression and correlation analyses conducted by Albouza et al., [38] and Russell [4], who indicated that athletes' collectivistic (i.e., benevolence and conformity, "moral values") and individualistic (i.e., achievement and power, "status") values were directly associated with aggressiveness.

The identification of the indirect effects of these values indicates that their influence on aggressiveness was only effective through their direct effects on self-regulatory mechanisms. These findings are in line with the results of research suggesting that the influence of athletes' values on their antisocial or transgressive attitudes is mediated by factors like ego orientation and the evaluation of the situation and action [13]. They are also consistent with the idea that the effects of values on aggressive behavior operate by affecting cognitive, emotional, and/or arousal mechanisms [16].

The original finding of our study was the strong mediating roles of resistive self-regulatory efficacy and moral disengagement in the values-aggressiveness relationship. This result enriches the literature and lends support to the idea that resistive self-regulatory efficacy and moral disengagement are important self-regulatory mechanisms of antisocial conduct in sport [17, 21, 33]. In accordance with social cognitive theory [19], it can thus be argued that the indirect effects of sports-related values on athletes' aggressiveness operate by affecting resistive self-regulatory efficacy and moral disengagement mechanisms. Furthermore, this finding indicates that moral disengagement is a proximal determinant of athletes' aggressiveness, confirming earlier findings of a direct relationship between moral disengagement and aggressiveness for adolescents and young adults [23, 25] and the negative influence of resistive self-regulatory efficacy on moral disengagement [33]. This finding also lends support to the suggestion that moral disengagement in sport may be a mediator in the relationship between athletes' values and their behavior [39].

As hypothesized, status values was negatively linked to resistive self-regulatory efficacy and positively linked to moral disengagement, whereas moral values was positively linked to resistive self-regulatory efficacy and negatively linked to moral disengagement. Accordingly, the opposite collectivistic and individualistic values of athletes (moral values vs status values) predicted and served as adaptive moral standards for their respective regulating mechanisms (resistive self-regulatory efficacy vs moral disengagement) [17, 19], which in turn can be used to evaluate their aggressive behavior and attitudes in sport (inhibition vs endorsement) [4, 13, 23]. Thus, the extent to which an athlete valorizes the moral or the status values does not directly minimize or maximize aggressiveness but exerts an influence on the extent to which the athlete engages in resistive self-regulatory efficacy or moral disengagement, which in turn influences the severity of aggressiveness. Therefore, the major contribution of this cross-sectional study is our demonstration of how opposite sports-related values, which serve to shape moral or personal standards, and different regulating mechanisms may guide athletes to self-impose negative or positive sanctions on their moral and transgressive conduct in sport [17, 19].

At a theoretical level, these findings enrich the literature on social cognitive theory [19] by suggesting that collectivistic and/or individualistic values are significant predictors of self-regulatory mechanisms of aggressiveness in athletes. The process of moral disengagement by which individuals legitimize their aggressive behavior to avoid experiencing negative self-evaluations and guilt [51] can be reinforced by activating individualistic values like power or status-enhancement, by which, conversely, resistive self-regulatory efficacy may be decreased. In contrast, by activating collectivistic values like conservatism or moral values, the athletes' moral disengagement can be decreased and their self-regulatory efficacy reinforced.

At a practical level, these findings indicate that high resistive self-regulatory efficacy and low moral disengagement may constitute a profile of those athletes who emphasize moral values. Essentially, placing a high value on moral values means agreeing to play by the rules and uphold the spirit of the game [13], and athletes committed to this value are likely to avoid inappropriately aggressive behavior [40]. Moreover, these athletes seem to define their interpersonal and moral relationships with teammates, opponents and officials in the light of this value [4, 40] and display a strong ca-

pacity to distinguish between good and bad, thereby maintaining self-control over aggressive or unsuitable acts [4, 38]. In contrast, athletes with lower resistive self-regulatory efficacy and higher moral disengagement are more likely to express greater aggression in order to gain control over their opponents and unfairly gain competitive advantage. Indeed, these individualistic values had a positive predictive influence on the athletes' aggressiveness dimensions (e.g., physical and verbal aggression, hostility and anger) [4, 38] and antisocial attitudes [13]. Therefore, the findings indicate that moral values and resistive self-regulatory efficacy are significant factors in an athlete's profile that should be taken into account to enhance training methods. The identification of this psychological structure might be the first step in preventing negative outcomes in sports competitions by moderating the aggression level of vulnerable athletes.

As already noted, sports values influence athletes' aggressiveness [4, 38] and the mechanisms underlying their aggressive behaviors [17, 19]. Our structural model provides a useful framework for gaining greater insight into some of the discrepant results of aggressiveness studies in athletes [3, 7]. In the present study, the athletes' sports-related values provided personal or moral standards for acting, and this is important for understanding and ultimately predicting an athlete's likelihood of engaging in aggressive behavior.

Several limitations of this study should be noted. First, this study was cross-sectional and no causal links could be demonstrated. Even though we can rule out reverse causality, it is possible that variables that were not assessed, like affective self-regulatory efficacy, accounted for some or all of the relationships between the variables that were assessed. Thus, a longitudinal study is needed to examine the stability of these results over time. Second, self-report measures are subject to social desirability bias. Although studies on the associations between values and other personality variables of social desirability have revealed that these two constructs have little or no consistent relationship [13], future studies should nevertheless observe the athletes in their natural environment during real-life sports competition to determine the collectivistic or individualistic values reflected in their behaviors. The observational findings could then be compared with the athletes' self-reports. Last, with only 144 males and 111 females, it was difficult to use the multiple-groups model to simultaneously estimate the same pattern of relationships among variables in the samples of males and females in different sports. Therefore, an interesting next step would be to build a sample with many more competitors in the same sport and compare the model by gender. Future research is also needed to explore the influence of athletes' values on other variables like affective self-regulatory efficacy and its relationship with aggressive behavior.

Conclusion

To conclude, this study fills a gap in the existing literature and provides the first evidence that self-regulatory mechanisms mediate the association between athletes' sports-related values and aggressiveness. Second, it provides empirical support for Bandura's social cognitive theory of moral thought and action by showing that high resistive self-regulatory efficacy inhibits aggressive conduct via low moral disengagement, which increases the likelihood of engaging in antisocial conduct, and by suggesting that athletes' values such as moral and status values are significant predictors of these self-regulatory mechanisms.

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