JOURNAL OF SPORTS SCIENCES
2023, VOL. 41, NO. 9, 820–832
https://doi.org/10.1080/02640414.2023.2240614

Routledge
Taylor & Francis Group

SPORT AND EXERCISE PSYCHOLOGY

Perceived coach-created empowering and disempowering motivational climate and moral behaviour in sport: mediating role of moral disengagement

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ABSTRACT

Based on Duda's (2013) hierarchical and multidimensional conceptualization, this research integrates motivational climate dimensions from Achievement Goal Theory and Self-Determination Theory to investigate the constructs of empowering/disempowering motivational climates. We aimed to investigate the relationship between perceived coach-created motivational climate and prosocial-antisocial behaviours and determine whether moral disengagement mediated this relationship. 423 athletes completed self-reported questionnaires. The results showed that empowering motivational climate had a positive direct association with prosocial behaviour towards opponents/teammates. Disempowering motivational climate had a positive direct relationship with antisocial behaviour towards opponents/teammates. Also, disempowering motivational climate was indirectly related to antisocial behaviour towards teammates, antisocial behaviour towards opponents and prosocial behaviour towards opponents via moral disengagement. These findings suggest that athletes' perception of coach-created empowering motivational climate is likely to enhance athletes' prosocial behaviours, whereas athletes' perception of coach-created disempowering motivational climate may result in their higher antisocial behaviours which is mediated by moral disengagement. The findings emphasize the role of perceived coach-created motivational climates in athletes' moral behaviours, provide useful information on the mediating role of moral disengagement in this relationship and suggest practical implications for sports coaches, sports psychologists and sport executives who aim to create a positive sports environment for athletes.

ARTICLE HISTORY
Received 4 March 2022
Accepted 18 July 2023

KEYWORDS
Empowering motivational climate; disempowering motivational climate; prosocial behaviour; antisocial behaviour; moral disengagement

Introduction

Coach-created motivational climate

There are many factors that influence athletes' sports experiences. Motivational climate is one of these factors. Motivational climate is established by the pattern of normative influences, evaluative standards, rewards and sanctions, interpersonal interactions, and values communicated within the achievement environment (Smith et al., 2008). In a sports context, motivational climate is shaped by the behaviours of significant others such as coaches, parents, and peers. Therefore, athletes spend a lot of time with their coaches in and out of their training sessions and competitions, and the coach-created motivational climate as a research topic has attracted researchers' attention. The social-psychological environment or "motivational climate" created by the coach is associated with athletes' cognition, affect, and behaviour (Duda, 2001). The vast majority of research focusing on the social-psychological environment created by the coach was driven by modern motivational theories such as Achievement Goal Theory (AGT; Ames, 1992; Nicholls, 1989) and Self-Determination Theory (SDT; E. Deci & Ryan, 1985; E. L. Deci & Ryan, 2000).

AGT focuses on two types of motivational climates. These are task-involving and ego-involving climates. In a task-involving climate, coaches reward and encourage mastery in relevant tasks and emphasize individual development while encouraging athletes to develop new skills, understand their tasks, increase their level of competence, and gain a sense of self-referenced mastery. On the other hand, coaches creating an ego-involving climate value beating the opponent and performing better than the others do (Ames, 1992)

SDT argues that being intrinsically motivated or self-determined is important for better behavioural outcomes and conceptualizes that three basic psychological needs must be satisfied for higher intrinsic or self-determined motivation (Ryan et al., 2017). These three basic psychological needs are competence, autonomy, and relatedness. Competence is a sense of performing effectively and dealing with optimum challenges and experiencing physical and social mastery. Autonomy explains the tendencies of self-regulation for a person's behavioural goals and organizing and regulating their behaviours. The last need, relatedness is a sense of connecting effectively with others. SDT researchers state that social agents can be supporting or thwarting the basic psychological needs and emphasize the importance of need-supportive behaviours (Ryan et al., 2017). Within the context of sport, coaches' behaviours constitute a coach-created motivational climate and it either supports or thwarts athletes' basic psychological needs. From the perspectives of SDT, three types of coach-created motivational climate have been investigated. These are autonomy-supportive, controlling, and socially supportive coaching climates. The autonomy-supportive climate is

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conceptualized as providing a sense of choice and decision-making, supporting self-initiative, considering individual perspectives, and providing a rationale to athletes. In a socially supportive climate, a sports coach ensures every athlete is cared for and feels valued both as a player and as a person (Appleton et al., 2016; Fenton et al., 2017). On the other hand, controlling coaching climates are characterized by coaches' controlling behaviours. Coaches, creating such climates, exhibit a controlling interpersonal style, behave in a coercive, pressuring, and an authoritarian way to impose a specific and preconceived way of thinking and behaving upon their athletes (Bartholomew et al., 2010). The relevant literature showed that coach-created controlling motivational climate can harm athletes, whereas autonomy-supportive and socially supportive motivational climates are beneficial for athletic outcomes (Aydın & Sarı, 2021; Hodge & Lonsdale, 2011; Knight et al., 2018; Stanger et al., 2018).

There are many studies investigating the concept of motivational climate from the perspective of either AGT (Duda, 1999a, 1999b) or SDT (Mageau & Vallerand, 2003). Researchers started to investigate the conceptual and empirical links between the key constructs of AGT and SDT in the mid-1990s (Duda et al., 1995). Eventually, Duda (2013) conceptualized the *coach-created empowering and disempowering motivational climate* integrating the major social-environmental dimensions emphasized within AGT and SDT. According to Duda (2013), the coach-created motivational climate can be more or less "empowering" and "disempowering". The coach-created empowering motivational climate is comprised of lower-order task-involving, autonomy-supportive, and socially supportive characteristics. Conversely, disempowering climate encapsulates lower-order ego-involving and controlling characteristics (Appleton et al., 2016).

When investigating social environment in sports, there are some advantages of using empowering and disempowering motivational climate model instead of employing only AGT or SDT. For example, Quested and Duda (2010) revealed that the environmental dimensions from AGT and SDT predicted unique variance in dancers' motivational process and that the effects of AGT constructs did not suppress the effects of SDT constructs in the same structural equation model. Accordingly, Appleton et al. (2016) emphasized that each climate dimension of AGT and SDT holds distinct implications for athletes' motivational process. They therefore stated that the environmental factors emphasized in the two theories should be considered together (Appleton et al., 2016). Moreover, Appleton et al. (2016) stated that Duda's (2013) model differentiates between support of competence per se and the support of a task-focused conception of competence. This is an important contribution of Duda's model because, in some instances, support for competence need can lead to maladaptive or undesirable consequences if competence is conceived in a primarily ego-involving manner (Ntoumanis & Standage, 2009).

There have been many studies on empowering and disempowering motivational climates in sports. The findings from the relevant investigations have shown that empowering motivational climate may enhances positive outcomes in sports such as athletes' motivation, enjoyment, well-being, and prosocial behaviours whereas disempowering motivational climate tends to be detrimental for athletes (Appleton & Duda, 2016; Birr et al., 2023; Castillo-Jiménez et al., 2022; Fenton et al., 2017; Gutiérrez-García et al., 2019; Krommidas et al., 2022; Sarı & Köleli, 2020). For example, Gutiérrez-García et al. (2019) found that there is a significant relationship between baseball pitchers' perception of empowering motivational climate and their enjoyment. The results of Sarı and Köleli's (2020) research revealed that higher levels of disempowering motivational climate were associated with higher levels of burnout and lower levels of moral decision making in athletes. On the other hand, higher levels of empowering motivational climate were associated with athletes' lower levels of burnout and higher levels of moral decision making (Sarı & Köleli, 2020). A recent study in young male soccer players revealed that empowering motivational climate was positively related to satisfaction of basic psychological needs and intention to continue sports and whereas disempowering motivational climate was related to higher levels of basic psychological need thwarting and intention to drop out (Castillo-Jiménez et al., 2022). Lastly, Krommidas et al. (2022) revealed that young male soccer players' perception of higher levels of empowering motivational climate was associated with athletes' lower sport-related violence, higher subjective vitality, and higher sport enjoyment. In short, above-mentioned studies suggest that empowering motivational climate may result in positive sportive outcomes while disempowering motivational climate may lead to undesirable consequences in athletes. These studies also show that Duda's (2013) conceptualisation of empowering and disempowering motivational climate is an effective approach to explain athletes' sports experience.

Prosocial and antisocial behaviours

The terms prosocial and antisocial behaviour have been used to refer to the proactive and inhibitive aspects of morality (Kavussanu & Boardley, 2009). In other words, proactive morality is to behave humanely, whereas inhibitive morality is to refrain from behaving inhumanely (Bandura, 1999). Eisenberg and Fabes (1998) defined prosocial behaviour as voluntary behaviour intended to help or benefit another individual and an example in sport can be sportsmanship and fair play. In contrast, antisocial behaviour is defined as voluntary behaviour intended to harm or disadvantage another individual (Kavussanu et al., 2006), and cheating and gamesmanship can be the examples of antisocial behaviours. Accordingly, many researchers have recently attempted to explain the psychosocial processes for both prosocial and antisocial behaviours in sport (Al-Yaaribi & Kavussanu, 2018; Chen et al., 2016; Kavussanu, 2019).

Sports participation contributes to athletes' moral behaviours (Camiré & Trudel, 2010; Kavussanu & Ntoumanis, 2003; Whitley et al., 2019). However, athletes' interactions with significant others such as sports coaches (Hodge & Lonsdale, 2011 (Bolter & Kipp, 2018; Hodge & Gucciardi, 2015); parents (Lisinskienė & Lochbaum, 2018) or teammates (Bruner et al., 2018) determine whether athletes' sports experiences are beneficial for their moral behaviours. Moreover, there are also other factors affecting athletes' moral behaviours. For example, athletes' achievement goals (Kavussanu et al., 2013; Stanger et al., 2018) their perception of motivational climate (Boardley &

Kavussanu, 2009) or their motivation (Hodge & Lonsdale, 2011) are linked to their prosocial and antisocial behaviours.

The relationship between coach-created motivational climate and prosocial-antisocial behaviours

The relevant literature shows that coach-created motivational climates can affect various psychological outcomes including athletes' moral behaviours. Several studies in sport psychology highlight the importance of coaches to influence athletes' moral behaviour in team and individual sport contexts (Al-Yaaribi & Kavussanu, 2018; Boardley & Kavussanu, 2009; Borrueco et al., 2018; Chen et al., 2016; Hodge & Gucciardi, 2015; Hodge & Lonsdale, 2011; Kavussanu et al., 2006; Leo Marcos et al., 2015; Ommundsen et al., 2003; Palou et al., 2013; Sarı & Derhayanoğlu, 2019; Sarı & Köleli, 2020; Stanger et al., 2018; Sukys et al., 2020). In their review about the correlates of the motivational climate, Harwood et al. (2015) examined more than 100 studies and found that mastery (task involving) motivational climate was associated with athletes' moral attitudes whereas performance (ego-involving) motivational climate was associated with their antisocial moral attitudes. It was also found that mastery motivational climate was associated with prosocial behaviour towards teammates (Boardley & Kavussanu, 2009; Stanger et al., 2018).

There are also studies about the relationship between autonomy supportive/controlling coaching behaviours and athletes prosocial/antisocial behaviours. For instance, athletes' perception of autonomy supportive coaching behaviour was positively related to prosocial behaviour towards teammates (Hodge & Gucciardi, 2015; Hodge & Lonsdale, 2011). Also, perceived controlling coaching behaviour was positively associated with moral disengagement, which, in turn, positively predicted antisocial behaviour towards opponents and teammates (Hodge & Gucciardi, 2015).

The importance of motivational climate in sports context has led researchers to intervention studies. Cheon et al. (2018, 2019) investigated the effectiveness of an autonomy-supportive intervention programme in a physical education context and concluded that the intervention increased students' prosocial behaviours and decreased their antisocial behaviours. Many researchers have used SDT or AGT as their motivational framework to explain the underlying psychological mechanism of prosocial and antisocial behaviours in sport (e.g., Al-Yaaribi & Kavussanu, 2018; Hodge & Gucciardi, 2015; Hodge & Lonsdale, 2011; Sage et al., 2006). Although moral behaviours in sport have been extensively studied from the perspectives of AGT or SDT separately, limited attention has been devoted to the combined approach of empowerment and disempowerment. For example, a recent scoping review indicated that only one study out of 10 included examined the benefits of empowering motivational environment on moral behaviours (Birr et al., 2023). It is known that coaches empower or disempower their athletes in many cases regarding athletes' moral behaviours. For example, while one coach may encourage his/her athlete to help lift the opposing player from the ground, another coach may prevent his athlete in this regard. Therefore, sports coaches' empowering and disempowering motivational climates' association with athletes' moral behaviour arouses interest.

Moral disengagement and its mediating role

While previous research has established significant links between the motivational climate in sports and moral behaviour, there remains a gap in knowledge regarding the underlying mechanisms that drive these relationships. One possible factor that could mediate these relationships is moral disengagement.

Although previous studies have found various important relationships between motivational climate and moral behaviour in sports, there is still a need for studies that reveal the mechanisms underlying these relationships. In these relationships moral disengagement is thought to be a potential mediator. Moral disengagement is a collective term for eight psychosocial mechanisms that allow individuals to transgress moral standards without experiencing negative affect. In the social cognitive theory of moral thought and action, Bandura assumes that moral disengagement acts to reduce anticipated feelings by weakening or eliminating self-regulatory processes (i.e., anticipation of undesirable feelings such as shame or guilt) about potential transgressive behaviour and thereby making that behaviour become more likely (Bandura, 1991, 1999). Thus, moral disengagement mechanisms may ease or promote antisocial behaviour in sport by allowing players to engage in such behaviour without experiencing emotions that would normally dissuade such action. The concept of moral disengagement has recently been studied in relation to prosocial/antisocial behaviours and other moral variables. Various studies have shown that moral disengagement is strongly linked to antisocial behaviour (e.g., Stanger et al., 2021, Boardley & Kavussanu, 2009, 2010; Gilchrist, 2012; Hardy et al., 2015; Hodge & Gucciardi, 2015; Hodge & Lonsdale, 2011; Jones et al., 2017; Stanger et al., 2018; Van de Pol et al., 2020), and transgressive behaviour (see Kavussanu, 2019). In addition, there is a strong relationship between collective moral disengagement ("which refers to the shared beliefs in justifying negative actions performed by the members of one's group") and antisocial behaviour (Danioni et al., 2021). Other researchers have also found a negative association between moral disengagement and prosocial behaviour in sports (Hardy et al., 2015; Hodge & Gucciardi, 2015; Jones et al., 2017; Stanger et al., 2018, 2021).

Environmental factors may affect people's behaviours via other factors. It is stated that the social environment is related to moral thoughts and actions (Bandura, 1999). For example, Shields et al. (2005) reported that coaches encouraged their athletes to engage in antisocial behaviour in sports such as cheating, arguing with an official and hurting an opponent. According to Gilchrist (2012), athletes who perceive their coach as creating a positive environment are less likely to disengage from moral standards. As a result, they are also less likely to exhibit antisocial behaviour. On the other hand, Van de Pol et al. (2020), found positive relationship between moral disengagement and coach's performance climate.

While the evidence across studies may be contradictory regarding the mediating effects, some studies have shown

that moral disengagement is a significant mediator between the components of disempowering (i.e., ego-involving, controlling) motivational climate and antisocial variables such as antisocial behaviour (Hodge & Gucciardi, 2015), doping intention (Guo et al., 2021), drug-taking susceptibility (Hodge et al., 2013). In addition, Van de Pol et al. (2020) stated that moral disengagement mediated the relationships between mastery climate and antisocial behaviour along with the relationship between performance climate and antisocial behaviour. Therefore, sports coaches' behaviours or coach created motivational climate may affect an athlete to morally disengage.

Although, the multidimensional model of empowering and disempowering coach climates has great importance in the context of sport psychology and researchers have investigated this salient topic according to various variables (Birr et al., 2023) the mediating role of moral disengagement in the relationship between coach-created empowering/disempowering motivational climates and athletes' prosocial and antisocial behaviours has yet to be established. Coach-created motivational climate can influence athletes' psychological outcomes via various variables. Therefore, it can be suggested that sports coaches can influence athletes' moral behaviours via some mediators. Relevant previous studies imply that moral disengagement can act as a mediator between motivational climate and athletes' moral behaviours. To be more precise, coach-created motivational climate may be associated with athletes' prosocial and antisocial behaviours via mediating role of moral disengagement.

Current study

Athletes' engagement in prosocial and antisocial behaviours can have positive outcomes, such as enjoyment and effort, as well as negative outcomes, such as anger and burnout, for recipients (see Kavussanu & Al-Yaaribi, 2021). Additionally, these negative outcomes may limit the possibility of effectively using sport as a vehicle to develop athletes' morality. Therefore, it is important to understand the motivational factors associated with athletes' engagement in prosocial and antisocial behaviours to create a psychologically healthy sports environment. Some studies have investigated the relationship between a coach-created motivational climate and athletes' moral behaviours. However, there has been no study focusing on the relationship between coach-created empowering and disempowering motivational climate and athletes' moral behaviours and exploring the mediating role of moral disengagement in this relationship.

The present study is based on Duda's (2013) abovementioned hierarchical and multidimensional conceptualization of empowering and disempowering motivational climate and Bandura's moral thought and action theory (Bandura, 1991, 2016). Our study purposes were twofold. We firstly aimed at evaluating the relationship between perceived coach-created motivational climate and athletes' prosocial and antisocial behaviours. The second aim was to discover the mediating role of moral disengagement in the relationship between perceived coach-created motivational climate and athletes' prosocial-antisocial behaviours. We hypothesized that:

H1. Perceived coach-created empowering motivational climate will be positively associated with athletes' prosocial behaviour.

H2. Perceived coach-created empowering motivational climate will be negatively associated with athletes' antisocial behaviour.

H3. Perceived coach-created disempowering motivational climate will be negatively associated with athletes' prosocial behaviour.

H4. Perceived coach-created disempowering motivational climate will be positively associated with athletes' antisocial behaviour.

H5. Moral disengagement will be a significant mediator between perceived coach-created empowering/disempowering motivational climate and athletes' prosocial/antisocial behaviours.

Method

Participants

The sample size was calculated using G Power 3.1.9.7 software (Faul et al., 2007). When the power (1β error probability) is 0.95, the α error probability is 0.05, the effect size of f^2 is 0.15 and the number of predictors is 3, the result for F-test indicated a sample size of 119. Our sample consisted of 423 athletes. Considering the result of the power analysis, the sample size of this study is adequate. The participants consisted of 264 (62.4%) males (Mage = 17.10, SD = 1.04; Mexperience = 6.30, SD = 2.65; Mtraining hour per week = 8.57, SD = 4.24) and 159 (37.6%) females (Mage = 16.80, SD = 0.87; Mexperience = 4.48, SD = 2.42; Mtraining hour per week = 6.81, SD = 3.31) as a total of 423 (62.4%) Turkish athletes (Mage = 16.99, SD = .99; Mexperience = 5.62, SD = 2.71; Mtraining hour per week = 7.91, SD = 4.00). The participants were aged between 16–21 and they were recruited from a convenience sample of sports clubs and university teams. Three hundred and fifty-seven participants were from team sports and 66 participants were from individual sports. Participants were chosen from a variety of sports such as football, basketball, volleyball, handball, athletics, wrestling etc. and they voluntarily participated in the present study.

Measures

Personal information form

This form was used to obtain information regarding participants' demographic characteristics. Participants were asked questions about their age, gender, sports branch, number of trainings per week, and length of sports experience.

Empowering and Disempowering Motivational Climate Questionnaire (EDMCQ-C)

This scale was developed by Appleton et al. (2016) to measure athletes' perception of coach-created empowering and disempowering motivational climate. The scale has 34 items in total. Empowering motivational climate and disempowering motivational climate have 17 items for each. The items are answered on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). Empowering motivational climate has three lower-order scales which are task-involving (example item = My coach encouraged players to try new skills), autonomy-supportive (example item = My coach gave players choices and options), and socially supportive (example item = My coach could be counted on to care, no matter what happened). Disempowering motivational climate has two lower-order factors which are labelled as ego-involving (example item=My coach gave most attention to the best players) and controlling coaching (example item=My coach was less friendly with players if they didn't make the effort to see things his/her way). Language adaptation of this scale into Turkish was made by Gözmen Elmas et al. (2018). They reported construct, convergent and discriminant validity along with internal consistency of the Turkish version of Empowering and Disempowering Motivational Climate Questionnaire (Gözmen Elmas et al., 2018). For the present research, we used empowering and disempowering higher-order dimensions, as is used by the previous research (Ruiz et al., 2021). Two factor model's measurement invariances have also been provided by Appleton et al. (2023).

Prosocial and Antisocial Behaviour in Sport Scale (PABSS)

PABSS was developed by Kavussanu and Boardley (2009). This scale contains 20 items classified under 4 sub-dimensions. The questions are answered by the athletes (1=never to 5=very often) according to how often they engage in the behaviours during the season. The sub-dimensions of the scale are Antisocial Opponent (example item = Physically intimidated an opponent), Antisocial Teammate (example item = Showed frustration at a teammate's poor play), Prosocial teammate (example item = Gave constructive feedback to a teammate), and Prosocial opponent (example item = Asked to stop play when an opponent was injured). Balçıkanlı (2013) conducted a language adaptation of this scale into Turkish. The original scale's four-factor structure was valid in Turkish athletes (Balçıkanlı, 2013). Balçıkanlı (2013) provided acceptable psychometric properties associated with the Turkish version of PABSS including construct validity and reliability (Balçıkanlı, 2013). The original English version of PABSS (Kavussanu & Boardley, 2009) was developed for team sports athletes. However, English version of this scale was later used for the athletes from individual sports (Hodge & Lonsdale, 2011). The construct validity and reliability of the Turkish version of this scale was also reported in a sample of team and individual sports athletes (Yıldız et al., 2018).

Moral Disengagement in Sport Scale-Short (MDSS-S)

The short form of the MDSS, which was developed by Boardley and Kavussanu (2008), was used to measure athletes' overall moral disengagement in sport. The long version of this scale was initially developed by Boardley and Kavussanu (2007). Later, the short form of MDSS was created (Boardley & Kavussanu, 2008). The scale has eight items under one dimension and answered on a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). All the items have negative meaning and higher scores on this scale represent higher moral disengagement of athletes (Example item = It is okay for players to lie to officials if it helps their team). Language adaptation of this scale into Turkish was made by Gürpınar (2015) and support for the construct validity and reliability of the Turkish version of MDSS-S was provided (Gürpınar, 2015).

Procedure

The experimental procedure conducted according to the ethical standards of the Declaration of Helsinki and the study design were in line with the Code of Ethics for Research of the authors' universities. Team coaches and managers were contacted and explained the aim and the procedures (consent forms etc.) of the present study. They were then asked for permission to access to the participants. Players suitable for the study were recruited from local sports clubs and university clubs to take part in the research. Athletes were then explained that participation was voluntary, honesty in responses was vital, and data would be kept confidential and written consent (and parental consent was required for athletes under 18 years old) was obtained prior to questionnaires. After having written consent, they completed the questionnaires which took around 10–15 minutes. Participants could quit the questionnaires at any point without explaining the reasons. Data were collected before the training sessions. Since the athletes evaluated their coaches in the study, coaches were not present in the environment where the data were collected.

Data analysis

Firstly, preliminary analysis was conducted according to Tabachnick et al. (2007). In this analysis, the data were screened for out-of-range values and missing values. Univariate normality was checked with skewness and kurtosis values. Multivariate normality was assessed by Mardia's multivariate coefficient. Descriptive statistics, Pearson product-moment correlation coefficients, and reliability via Cronbach alpha values were calculated for all the study variables (empowering motivational climate, disempowering motivational climate, moral disengagement, prosocial behaviours towards teammates, prosocial behaviours towards opponents, antisocial behaviours towards teammates, and antisocial behaviours towards opponents). Cronbach alpha values greater than 0.70 are considered as adequate reliability and a value between .60 and .70 was suggested to be the lowest acceptable value (Hair et al., 2006). Pearson correlation coefficients were interpreted as follows: 0–.19 = no correlation, .20–.39 = low correlation, .40–.59 = moderate correlation, .60–.79 = moderate-high correlation and .80 = high correlation (Zhu, 2012).

Confirmatory factor analyses for the measurement tools used in the present research were performed. The EDMCQ-C has five sub-scales with two higher-order dimensions (Appleton et al., 2016). Therefore, second order confirmatory

factor analysis (CFA) which is suitable to the hierarchical and multidimensional model of the EDMCQ-C as outlined by Appleton et al. (2016) was used. First order CFA was used for PABSS and MDSS-S.

After CFAs, path analysis with maximum likelihood (ML) estimation was employed in AMOS 20.0. Path analysis allows for the simultaneous examination of direct and indirect relationships in the proposed model and also tests the overall fit of the data to the hypothesized model (Byrne, 2016). Path analysis was used in the present research because it is a theory-driven analytical approach evaluating relationships between measured variables that are specified a priori (Kline, 2016; Mueller & Hancock, 2010). Instead of using structural equation modelling, we performed path analysis which assumes that all variables are measured without error. This was because the main research questions of the present study were about the variables, not the measurement model. Moreover, path analysis is widely used in relevant studies to test hypothesized mediated pathways between observed variables (Duncan et al., 2021; Hill et al., 2022). We proposed a path model containing empowering motivational climate, disempowering motivational climate, moral disengagement, prosocial behaviours towards teammates, prosocial behaviours towards opponents, antisocial behaviours towards teammates, and antisocial behaviours towards opponents. In this model, we investigated whether empowering and disempowering motivational climates are associated with athletes' prosocial and antisocial behaviours and whether this relationship is mediated by moral disengagement. Following the recent recommendations for effect size (Gignac & Szodorai, 2016), path coefficients' values of 0.10, 0.20, and 0.30 were interpreted as small, medium, and large effects, respectively. Indirect relationships in the hypothesized model were assessed by bias-corrected 95% confidence intervals (CIs) from estimates based on bootstrap sampling with 5000 random bootstrap samples. Reporting CIs of mediating effects and interpreting them conjointly with their point estimates is important (Cerin & MacKinnon, 2009). If bootstrap-generated 95% CI does not contain zero, effect sizes are considered significant. Bootstrapping provides the most powerful and reasonable method of obtaining confidence limits combined with lower risk of committing Type I error when testing indirect effects (Hayes & Scharkow, 2013; Preacher & Hayes, 2008).

Regarding the indirect relationship in the present research, moral disengagement was the mediator variable in the relationship between perceived empowering/disempowering motivation climate and athletes' prosocial/antisocial behaviours. A mediating relationship exists when the effect of an independent variable on a dependent variable depends on passing through a third variable (McGrath, 2011).

The error terms of the three pairs of variables in the hypothesized model were allowed to co-vary with one another (empowering & disempowering motivational climates; prosocial behaviour towards teammates & prosocial behaviour towards opponent; antisocial behaviour towards teammates & antisocial behaviour towards opponent). Correlating the error terms in these three pair of variables were in line with the relevant literature. There is evidence for the significant associations between the pairs of empowering/disempowering motivational climate (Appleton & Duda, 2016; Martínez-González et al., 2021), prosocial behaviour towards teammates/opponents and antisocial behaviour towards teammates/opponent (Graupensperger et al., 2018). Furthermore, the method of correlating error terms between the theoretically associated variables was used in many studies (McAllister et al., 2022; Rushton et al., 2020).

Several fit indices were used in the present study to assess the model fit (Hu & Bentler, 1999). These fit indices were Normalized Chi-Square (χ2), degree of freedom (df), Comparative Fit Index (CFI), Goodness of Fit Index (GFI), Root Mean Square Error of Approximation (RMSEA). A ratio of 2 for the χ2/df has been suggested to indicate a good model fit. However, a ratio of 3.0 or even as high as 5.0 may also represent an acceptable model fit, although it is generally expected to be below 3.00 for a good model fit. CFI and GFI values above 0.95 reveal an excellent model fit, while values between 0.90 and 0.95 represent a good model fit. A value of 0.05 or lower for RMSEA shows a very good fit, whereas a value between 0.05 and 0.08 is an indication of an acceptable model fit (Hair et al., 2006; Hooper et al., 2008; Schermelleh-Engel et al., 2003).

Results

Preliminary analysis

A frequency analysis was performed to check for incorrect data entries and a normal range between data points. For this purpose, the raw data in SPSS software were inspected by frequency analysis taking into account each item's minimum and maximum possible range. No out-of-range entries were identified. If missing values in a dataset are below the rate of 5%, any procedure to handle missing values can be used (Tabachnick et al., 2007). After checking for missing values, 20 observations had a few missing values which were lower than 5%. Therefore, the missing values were replaced by the mean of non-missing items for each case (Graham et al., 2003). Examination of skewness and kurtosis for all variables indicated univariate normality based on the cut-off values of skewness < 3.0 and kurtosis < 10.0 (Kline, 2016). Analysis of Mardia's multivariate coefficient (<5.0) indicated that the data distribution was normal.

Cronbach alpha values for empowering motivational climate, disempowering motivational climate, and antisocial behaviours towards opponents were above an acceptable level (>.70). The Cronbach alpha values for moral disengagement, prosocial behaviours towards teammates, prosocial behaviours towards opponents, and antisocial behaviours towards teammates were in the range of .60 to .70, which indicates that these scales have a modest level of internal consistency. This falls within the lower level of acceptability for scales with few items, as suggested by Hair et al. (2006). Therefore, it is important to interpret the findings related to these subscales with caution.

Bivariate correlations

It can be seen from Table 1 that empowering motivational climate was positively correlated with prosocial behaviours towards teammates ($r = .25$, $p < .001$) and prosocial behaviours towards

Table 1. Alpha coefficients, descriptive statistics, and correlations for all variables ($N = 423$).

	M	SD	1	2	3	4	5	6	7
1) EMP	4.28	0.56	(.88)						
2) DISEMP	2.44	0.82	−.53***	(.88)					
3) MD	3.04	1.10	−.23***	.38***	(.63)				
4) PS TM	4.30	0.55	.25***	−.08	−.04	(.63)			
5) PS OPP	3.67	0.96	.12*	.00	−.11*	.37***	(.68)		
6) AS TM	1.81	0.56	−.15**	.38***	.27***	.02	.02	(.69)	
7) AS OPP	1.96	0.70	−.17***	.31***	.39***	.05	.04	.49***	(.79)

Note: EMP= Empowering motivational climate, DISEMP=Disempowering motivational climate, MD=Moral disengagement, PS TM=Prosocial behaviour towards teammate, PS OPP= Prosocial behaviour towards opponent, AS TM= Antisocial behaviour towards teammate, AS OPP= Antisocial behaviour towards opponent. Bivariate correlations are presented below the diagonal. Empowering and disempowering motivational climates, as well as prosocial and antisocial behaviours were measured on scales from 1 to 5. Moral disengagement was measured on a scale from 1 to 7. Alpha coefficients are presented in parentheses on the diagonal. *p<.05, **p<.01, ***p< .001.

opponents ($r = .12$, $p < .05$); while it was negatively correlated with antisocial behaviours towards teammates ($r = -.15$, $p < .01$), antisocial behaviours towards opponents ($r = -.17$, $p < .01$) and moral disengagement ($r = -.23$, $p < .001$). Disempowering motivational climate was positively correlated with antisocial behaviours towards teammates ($r = .38$, $p < .001$), antisocial behaviours towards opponents ($r = .31$, $p < .001$) and moral disengagement ($r = .38$, $p < .001$). Furthermore, moral disengagement was positively correlated with antisocial behaviours towards teammates ($r = .27$, $p < .001$) and antisocial behaviours towards opponents ($r = .39$, $p < .001$) while it was negatively correlated with prosocial behaviours towards opponents ($r = -.11$, $p < .001$).

Confirmatory factor analysis

The results of the first and second order CFAs indicated that the fit indices for the models were adequate. The second-order CFA for empowering and disempowering motivational climate showed adequate model fit ($\chi 2/df = 2.08$; CFI = .91; GFI = .90; RMSEA = .051; factor loadings ranged between .41–.74) First-order CFAs for moral disengagement ($\chi 2/df = 2.88$; CFI = .92; GFI = .98; RMSEA = .067; Factor loadings ranged between .32—.48) and prosocial and antisocial behaviours ($\chi 2/df = 1.99$; CFI = .92; GFI = .93; RMSEA = .048; Factor loadings ranged between .45–.72) revealed adequate fit to the data.

Path analysis

Our model examining direct and indirect associations among empowering and disempowering motivational climate, moral disengagement along with prosocial and antisocial behaviours can be seen on Figure 1. The model provided good fit to data ($\chi 2/df = 1.29$; CFI = .99; NFI = .99; NNFI = .99; RMSEA = .026).

Direct relationship

We firstly examined the direct relationships. More specifically, we investigated the empowering and disempowering motivational climates' direct relationship with moral disengagement, as well as athletes' prosocial and antisocial behaviours. We also analysed whether moral disengagement is directly related to athletes' prosocial and antisocial behaviours. Significant direct and indirect relationships are coloured with grey in Table 2.

Empowering motivational climate was positively related to prosocial behaviours towards teammate (β=.28, $p < .05$,

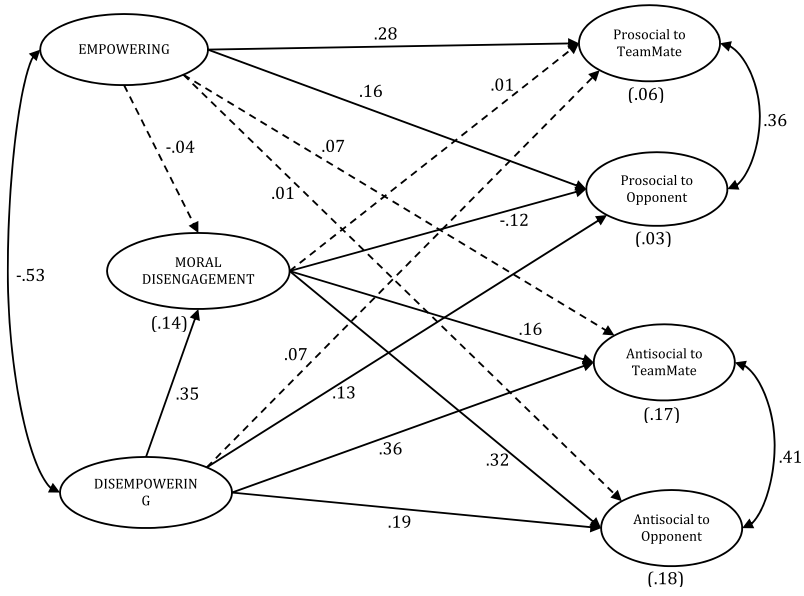

Figure 1. Results for the hypothesized model and estimated standardized coefficients. R^2 values are below the relevant dependent variable in parentheses. Solid lines=standardized coefficient is significant. Dashed lines=standardized coefficient is not significant.

Table 2. Standardized indirect effects of empowering and disempowering motivational climate to athletes' prosocial antisocial behaviour via moral disengagement.

			prosocial behaviours towards teammate			prosocial behaviours towards opponent		
	Mediator	Effect	Estimate	95% CI lower	95% CI upper	Estimate	95% CI lower	95% CI upper
Empowering	moral disengagement	Indirect	.01	−.01	.01	.01	−.01	.03
		Direct	.28	.17	.39	.16	.06	.26
		Total	.28	.17	.39	.16	.06	.27
Disempowering		Indirect	.01	−.04	.04	−.04	−.08	−.01
		Direct	.07	−.05	.18	.13	.02	.24
		Total	.07	−.04	.17	.09	−.02	.19
			antisocial behaviours towards teammate			antisocial behaviours towards opponent		
	Mediator	Effect	Estimate	95% CI lower	95% CI upper	Estimate	95% CI lower	95% CI upper
Empowering	moral disengagement	Indirect	−.01	−.03	.01	−.01	−.05	.02
		Direct	.07	−.04	.18	.01	−.11	.12
		Total	.07	−.04	.17	−.01	−.12	.10
Disempowering		Indirect	.06	.02	.10	.11	.07	.16
		Direct	.36	.23	.47	.19	.08	.30
		Total	.41	.30	.52	.31	.19	.42

Note: The cells coloured with grey shows the significant direct or indirect effect.

CI = .17—.39) and prosocial behaviours towards the opponent (β=.16, $p < .05$, CI = .06—.26). Disempowering motivational climate was positively related to moral disengagement (β=.35, $p < .05$, CI = .25—.44), antisocial behaviours towards teammate (β=.36, $p < .05$, CI = .23 — .47), antisocial behaviours towards the opponent (β=.19, $p < .05$, CI = .08—.30), prosocial behaviours towards the opponent (β=.13, $p < .05$, CI = .02—.24).

Moral disengagement was negatively related to prosocial behaviours towards the opponent (β=-.12, $p < .05$, CI =-.22 — −.02), positively related to antisocial behaviours towards teammate (β=.16, $p < .05$, CI = .06—.25), and antisocial behaviours towards the opponent (β=.32, $p < .05$, CI = .23—.40).

Indirect relationship

We examined whether empowering and disempowering motivational climates were related to prosocial behaviours towards a teammate, prosocial behaviours towards an opponent, antisocial behaviours towards a teammate, and antisocial behaviours towards an opponent via moral disengagement.

Athletes' perception of disempowering motivational climates was indirectly related to antisocial behaviours towards teammate (β=.06, $p < .05$, CI = .02 — .10), antisocial behaviours towards the opponent (β=.11, $p < .05$, CI = .07 — .16) and prosocial behaviours towards opponents (β=-.04, $p < .05$, CI = −.08 — −.01) via moral disengagement. There is no evidence for empowering motivational climate's indirect association with athletes' prosocial behaviours towards teammates (β=.01, $p > .05$, CI = −.01 — .01), prosocial behaviours towards opponents (β=.01, $p > .05$, CI = −.01 — .01), antisocial behaviours towards teammates (β=-.01, $p > .05$, CI = −.03 — .01), and antisocial behaviours towards opponents (β=-.01, $p > .05$, CI = −.05 — .02) via moral disengagement.

Discussion

The present study is one of the first attempts to examine the association between perceived coach-created empowering and disempowering motivational climate and athletes' moral behaviours. More precisely, we evaluated the relationship between perceived coach-created motivational climate and athletes' prosocial/antisocial behaviours and investigated the mediating role of athletes' moral disengagement in this relationship.

As hypothesized, empowering motivational climate had a small to medium level of positive direct association with prosocial behaviours towards teammates and opponents. Disempowering motivational climate had a medium to large level positive direct association with antisocial behaviours towards teammates and opponents. Our findings show that when athletes perceive their coaches behaving in an autonomy supportive way, creating a task-involving team environment and providing social support to the players, athletes were more likely to provide their teammates encouragement and support, give them positive and constructive feedback, and congratulate them for their good play. On the other hand, the results regarding the direct association between athletes' perception of disempowering coaching behaviours and antisocial behaviours can also be interpreted as when athletes perceive their coaches engaging in controlling use of rewards, intimidation, pressure, excessive personal control, overly emphasizing winning and others' referenced achievement criteria, they are likely to perform antisocial behaviours towards their opponents such as intimidating, deliberately distracting, injuring, trying to injure or provoking an opponent etc. These findings are similar to previous research revealing that empowering motivational climate was positively related to prosocial behaviour and disempowering climate was positively related to antisocial behaviour (Sukys et al., 2020). Perception of an empowering climate is also linked to sportsmanship whereas perception of a disempowering climate is linked to the acceptance of cheating and gamesmanship (Borrueco et al., 2018). Moreover, the autonomy-supportive motivational climate is a significant correlate of athletes' prosocial behaviour while controlling coaching behaviour correlates with athletes' antisocial behaviours (Chen et al., 2016; Hodge & Gucciardi, 2015; Hodge & Lonsdale, 2011). Similarly, some studies showed that mastery climate was positively linked to prosocial behaviours and negatively linked to antisocial behaviours towards teammates (Boardley & Kavussanu, 2009; Stanger et al., 2018) and

opponents (Stanger et al., 2018). In addition, positive relationships between performance climate and antisocial behaviour towards teammates were also reported (Boardley & Kavussanu, 2009). Similar results were also presented in a systematic review (see Harwood et al., 2015). In a study conducted within the scope of physical education lessons, it was observed that teachers benefited from participation in an intervention in which they were trained to adopt autonomy-supportive behaviours. The intervention increased teachers' autonomy-supportive behaviours which resulted in students' increased prosocial behaviour, decreased antisocial behaviour, and decreased cheating (Cheon et al., 2018, 2019).

Contrary to our hypothesis, there is an interesting finding in the present study emerged that disempowering motivational climate had a direct positive relationship with prosocial behaviours towards opponents. Although the effect size of this direct relationship is small and the total effect combining disempowering motivational climate's direct and indirect relationships with prosocial behaviours towards opponents is insignificant, the direct effect itself is positive and significant. However, the bivariate correlation between disempowering motivational climate and prosocial behaviours towards opponents is not significant. The incongruence between the results of the bivariate correlation and the path analysis could be due to the fact that the correlation coefficient only represents the linear dependence between the two variables, and it does not control for the possibility that other variables might be involved in the relationship as well. In contrast, path analysis takes into account all the variables entered into the model. We believe it is worth noting this contrasting finding to draw attention and to consider it in future investigations.

The significant direct relationship between a disempowering motivational climate and prosocial behaviour towards opponents could be attributed to the controlling coaching practices. Athletes may feel controlled to demonstrate prosocial behaviours in a controlling coaching climate which is a sub-dimension of disempowering climate. Additionally, an ego-involving climate, another sub-dimension of a disempowering coaching climate, may also play a role in the significant direct association between a disempowering motivational climate and athletes' prosocial behaviour towards opponents. In high ego-involving environments where beating the opponent and performing better than the others are valued, athletes might exhibit more prosocial behaviours towards their opponents to influence the referees' decisions in their favour. Similarly, athletes may believe that they need to adopt more prosocial behaviours to defeat their opponents, as failure to do so could result in their elimination from the competition. This particular finding is worth investigating in depth in the future studies in which qualitative research methods are employed.

The second purpose of this study was to investigate whether perceived coach-created motivational climate was indirectly associated with athletes' moral behaviours via moral disengagement. In the present study, it was found that perceived coach-created disempowering motivational climate's relationship to antisocial behaviours towards teammates, antisocial behaviours towards opponents, and prosocial behaviours towards opponents was mediated by moral disengagement. It was also found that moral disengagement did not mediate the relationship between perceived coach-created empowering motivational climate and athletes' prosocial/antisocial behaviours. Theoretically, this finding aligns with previous research showing that moral disengagement justifies antisocial behaviour instead of justifying the absence of prosocial behaviour (Hodge & Lonsdale, 2011; Kavussanu et al., 2013).

The results showed that higher scores on the perceived coach-created disempowering motivational climate may indirectly lead to higher levels of athletes' antisocial behaviours towards teammates and opponents, along with lower levels of prosocial behaviours towards opponents. All these relationships were significantly mediated by moral disengagement. Coaching practices that create a disempowering climate may lead athletes to have higher levels of moral disengagement, which in turn may increase their antisocial behaviours and decrease their prosocial behaviours. Such coaching practices involve behaviours such as overemphasizing winning, making comparisons among athletes, excessive personal control, controlling the use of rewards, and intimidation. These types of coaching behaviours may increase athletes' levels of moral disengagement. When athletes' level of moral disengagement is high, they may be more likely to engage in more antisocial behaviours and fewer prosocial behaviours. Because the psychosocial mechanisms of moral disengagement allow individuals to transgress moral standards without experiencing negative affect.

It is a very important finding that although the direct association between disempowering motivational climate and athletes' prosocial behaviour towards opponents is positive, the indirect association between these two variables via moral disengagement was negative. It appears that moral disengagement is a very effective mediator between disempowering coaching behaviours and athletes' prosocial behaviours towards opponents. The mediating role of moral disengagement can also be discussed in line with the relevant findings from previous research. For example, Stanger et al. (2018) found that an ego-involving climate was positively associated with antisocial behaviour towards teammates and moral disengagement mediated this relationship. Moreover, the ego-involving climate was also indirectly associated with antisocial behaviour towards opponents via moral disengagement. In contrast, a mastery climate indirectly contributed to antisocial behaviour towards opponents and teammates via support, perspective-taking, and moral disengagement. In another study, Danioni et al. (2021), found that collective moral disengagement and an ego-involving motivational climate were positively and directly associated with antisocial behaviours. Furthermore, ego orientation and perceived value of toughness had indirect positive associations with antisocial behaviour towards opponents and teammates via moral disengagement in soccer players (Boardley & Kavussanu, 2010). When the findings of the current study are considered in line with the all the above-mentioned studies, it can be concluded that promoting an empowering motivational climate and reducing a disempowering one could be more beneficial for athletes to behave morally and moral disengagement plays a significant role in mediating this relationship.

The path model in this study can also be examined in relation to a previous model proposed by Duda and

Appleton (2016), which extended the original hierarchical and multidimensional model proposed by Duda (2013). They indicated that satisfaction and thwarting of athletes' basic psychological needs, including autonomy, competence, and relatedness, mediate the relationship between empowering and disempowering coach-created climates and athletes' functioning and well-being. Specifically, they proposed that the degree to which athletes' basic psychological needs are satisfied or thwarted is influenced by the extent to which coach-created climates are empowering or disempowering. Duda and Appleton (2016) stated that athletes' optimal functioning and well-being are associated with satisfaction of their basic psychological needs of autonomy, competence, and relatedness, whereas compromised functioning and ill-being are associated with thwarting of these needs. Duda and Appleton (2016) identified need satisfaction and need thwarting as mediators but moral disengagement was not included in their model. Therefore, our study provides evidence for the role of moral disengagement as an alternative mediator. The model proposed by Duda and Appleton (2016) could be extended by including moral disengagement as an additional mediator.

Limitations of the study and directions for future research

While this research provided some useful and interesting findings, they need to be evaluated considering the study's limitations. First, path analysis only examines linear, one-way relationships between the variables, which means that the alternative models with more complex and reciprocal relationships between perceived coach-created motivational climates and athletes' moral outcomes could not be considered in this research. Moreover, path analysis does not establish causal relationships. Causal relationships can only be achieved through study design, such as experimental manipulation, not statistical analyses (Barbeau et al., 2019). Thus, causal relationships among the variables examined in the present study can be further tested by different research methods.

It is important to note that this study had a cross-sectional design, which limits our ability to make causal claims about the identified relationships. Thus, future studies should use experimental or longitudinal designs to investigate causality. It is important to note that this study had a cross-sectional design which limits our ability to make causal claims about the identified relationships. Thus, future studies should use experimental or longitudinal designs to investigate causality. Another limitation of path analysis is that it relies on a single measure for each construct in the model (Meyers et al., 2016) and assumes that the measured variables accurately represent their underlying constructs (without accounting for measurement error) (Kashubeck, 1989). Furthermore, data collection tools used in this study were self-report measures. Future research should consider using different forms of data collection tools and methods, which are not limited to athletes' perceptions. In future studies, it would be beneficial for researchers to examine the role of athletes' age, type of sports, gender, culture and level of competition as potential mediator variables in the relationships among perceived coach-created motivational climate, moral disengagement and prosocial/antisocial behaviours in future studies.

Conclusion and implication for practice

In conclusion, this study extends our understanding of coaching practices as explained by the previous researchers' conceptualizations (Duda, 2013; Duda & Appleton, 2016). The study reveals the association between empowering and disempowering motivational climates and athletes' prosocial and antisocial behaviours with moral disengagement playing a mediating role in this relationship. Our results highlight the importance of the coach-created motivational climate for athletes' moral behaviours.

From an applied perspective, the study provides useful information about favourable coaching practices that contribute to athletes' moral behaviours. The findings are especially important for sports coaches, sports psychologists and executives working in sports clubs. The findings suggest that, sports coaches may adopt more empowering and less disempowering coaching behaviours, potentially leading athletes' exhibiting higher levels of prosocial and lower levels of antisocial behaviours via moral disengagement. Moreover, sports psychologists and executives at sports teams can utilize the findings of this study and take necessary actions in their practices. For instance, they can motivate sports coaches to adopt more empowering and less disempowering coaching styles, which have been associated with higher levels of prosocial behaviours and lower levels of antisocial behaviours among athletes.

Disclosure statement

No potential conflict of interest was reported by the author(s). This research was presented at the 15th European Congress of Sport and Exercise Psychology in Munster, Germany in 2019. The participant received a grant from the TUBITAK's 2224-A Grant Program for Participation in Scientific Meetings Abroad for this congress.

Funding

The author(s) reported there is no funding associated with the work featured in this article.

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