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Psychological dynamics shaping performance perception in athletes: the influence of coaching behaviours, psychological safety, self-efficacy, and resilience

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Abstract

This study aimed to examine how athletes' perceptions of supportive and controlling coaching behaviours influence their perceived performance through the mediating effects of psychological safety, self-efficacy, and psychological resilience. Unlike previous work, this study integrates these three psychological factors into a single structural model, offering a comprehensive understanding of the mechanisms linking coaching behaviours to performance perceptions. Data were collected from 369 Turkish athletes representing different sports and competitive levels using validated self-report questionnaires. Structural equation modelling (SEM) was employed to analyse the direct and indirect relationships among variables. The results revealed that supportive coaching behaviours positively predicted perceived performance through increased psychological safety, self-efficacy, and resilience, whereas controlling coaching behaviours had the opposite effect. Among the mediators, self-efficacy emerged as the strongest predictor of performance perception. These findings provide novel evidence that psychological safety and resilience strengthen this relationship by fostering adaptive and confident athlete functioning. The study contributes to the literature by demonstrating the integrative role of psychological resources within the frameworks of self-determination and social cognitive theories. Practically, it underscores the importance of supportive coaching practices that enhance psychological resources essential for sustained motivation, well-being, and optimal performance.

Keywords Coaching behaviours, Perceived performance, Psychological safety, Self-efficacy, Psychological resilience, Coach–athlete relationship

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Introduction

Athletic performance is a broad and multidimensional concept influenced by physiological, biomechanical, and psychological factors [1]. In this regard, sports psychology constitutes a discipline that integrates psychological and physiological dimensions to provide a comprehensive understanding of athletic performance [2, 3]. Since athletic development cannot rely solely on physical training, it is essential to acknowledge the equal importance of psychological preparation in achieving optimal performance. Despite the abundance of studies focusing on physical parameters, the limits of athletic performance remain a matter of debate, and performance is increasingly being examined not only through physiological but also through psychological constructs. Consequently, psychological performance is considered as important as physical performance in sports [4]. Research supports the need to consider all factors affecting psychological performance components when assessing overall athletic capacity [5]. Therefore, developing both physical and mental skills and continuously monitoring athletes' mental health are essential for maintaining a balanced and sustainable sports system.

Within the sport context, psychological factors play a crucial role in shaping athletes' perceptions of their own performance [6]. Perceived performance, one of these factors, refers to athletes' self-assessments of their physical abilities, technical and tactical skills, self-confidence, and readiness [7]. This dynamic and multifaceted concept is powerfully shaped by the social and psychological environment, particularly the quality of coach–athlete relationships, which can satisfy athletes' basic psychological needs and foster mental development [8]. Therefore, coaches are encouraged to cultivate trust-based, supportive relationships that promote athletes' psychological well-being and performance [9]. Supportive coaching behaviours have been consistently shown to enhance perceived performance and motivation, whereas controlling or thwarting approaches may undermine these outcomes, contributing to higher anxiety, burnout, and lower perceived performance [10–13]. Perceived performance itself can reinforce satisfaction with competence, creating a positive feedback loop [14–17]. However, the impact of coaching behaviours may vary depending on individual differences, contextual factors, and athletes' psychological resilience, which also plays a crucial role in shaping performance perceptions [18]. Building on these insights, recent literature has begun to focus on the mediating role of the coach–athlete relationship in shaping key psychological outcomes, although contextual influences remain insufficiently explored.

While the literature emphasises the role of the coach–athlete relationship in key psychological outcomes, the influence of contextual factors on this role remains

unclear. Although relationship quality has been shown to support basic psychological needs and enhance performance [19, 20], it remains unclear which relational components most strongly shape specific psychological outcomes. Similarly, while relationship quality mediates the effects of coaching behaviours on psychological safety [21, 22], little is known about how this mediation varies. Research also indicates that coaches' control-oriented behaviours can undermine athletes' resilience [13], yet understanding these mechanisms is particularly important, as alignment between coach and athlete perceptions has been shown to enhance basic need satisfaction [11]. Consequently, investigating the psychological mechanisms through which the coach–athlete relationship shapes perceived performance can provide a more holistic framework than existing research has examined.

Building on these insights, optimal performance requires self-awareness, which is closely linked to the quality of the coach–athlete relationship [23]. Supportive and healthy environments foster psychological safety, enhance self-efficacy, and promote resilience—mechanisms that enable athletes to cope effectively under pressure, maintain focus, and optimise performance [9, 21, 24–26]. High-quality relationships facilitate competence satisfaction, social support, and autonomy, while tactical clarity, role definition, and task-oriented feedback further strengthen athletes' perceived and actual capabilities [27–29]. Psychological safety underpins resilience, enabling athletes to communicate openly, adapt to challenges, and make informed decisions under pressure [18, 21, 30–36]. Individual differences, motivational climate, and relationship quality all shape the development of resilience, which in turn supports performance and well-being [8].

Despite its global importance, sport psychology remains underdeveloped in Türkiye. Given the increasing awareness of mental health, examining these constructs in Türkiye is both timely and necessary. Although the importance of psychological factors is recognised, integrating psychological skills training into daily practice is still limited [37, 38]. Supporting and monitoring athletes' mental health is therefore essential for sustaining a well-functioning and holistic sports system [39, 40].

Compared to global developments, Türkiye's adoption of sports psychology is still in its early stages and has progressed at a slower pace [41, 42]. Despite advances in understanding psychological aspects of athletic performance, gaps remain in the literature [43]. Globally, sports psychology is emphasised as indispensable for performance, yet in Türkiye it remains underrecognized [2].

Finally, despite the growing emphasis on sport psychology, limited empirical research has examined the psychological dynamics shaping performance perception,

particularly in Türkiye. This study addresses this gap by empirically examining these mediating mechanisms.

Theoretical framework

This research was framed within the framework of Self-Determination Theory [44] and Social Cognitive Theory [45] to understand athletes' perceived performance and psychological mechanisms.

SDT posits that human behaviour is motivated by the fulfilment of three basic psychological needs: autonomy, competence, and relatedness [44, 46]. Autonomy involves acting in accordance with one's genuine interests and values; competence reflects the need to feel effective and capable; and relatedness entails feeling connected to others and part of a social group [12]. When these needs are supported, they strongly relate to positive performance outcomes [20]; conversely, thwarting or neglecting even one need can diminish intrinsic motivation and positive experiences [46]. Coach–athlete relationships play a crucial role in facilitating or hindering the fulfilment of these needs [28, 47]. Coaches' behaviours can be categorised as (1) autonomy-supportive, offering choices and encouraging self-regulation (vs. controlling); (2) competence-supportive, providing structure, tactical guidance, role clarity, and constructive feedback (vs. pressuring, inconsistent, or discouraging), and (3) relatedness-supportive, emphasising care, trust, and involvement (vs. rejecting) [12, 28]. Need supportive coaching, particularly when combined with genuine interest and encouragement for self-expression, has been linked to positive outcomes in sport [25, 47]. In contrast, controlling or pressuring coaching styles can impair need satisfaction, leading to lower motivation, higher anxiety, and risk of burnout [10, 47]. Thwarting styles can impair need satisfaction, leading to lower motivation, higher anxiety, and an increased risk of burnout [10, 47].

According to SCT, human motivation and action are regulated by forethought. Among its core constructs, perceived self-efficacy—the belief in one's ability to perform actions required to achieve desired outcomes—is central [48]. In the sports context, SCT has significant implications for both coaches and athletes. Coaches who understand and apply the principles of this theory can enhance athletes' performance, motivation, and learning [49]. Empirical evidence further indicates a strong relationship between self-efficacy and need satisfaction [27]. Coaches who cultivate socially supportive environments characterised by trust, closeness, and commitment enhance athletes' self-efficacy perceptions, which, in turn, positively impact performance [29]. Supportive coach–athlete relationships specifically reinforce competence needs, thereby promoting motivation and performance [24, 25]. Consequently, athletes with higher self-efficacy are more likely to excel in their tasks, manage

competitive anxiety effectively, and respond constructively to both success and failure [50–53]. Together, these frameworks highlight the importance of psychological factors in shaping athletes' motivation, performance, and responses to success and failure.

Aims and hypotheses

Under the integrated lenses of Self-Determination Theory and Social Cognitive Theory, this study aims to clarify how athletes' perceptions of supportive versus controlling coaching behaviours shape perceived performance via three psychological resources—psychological safety, self-efficacy, and resilience—by testing their direct and mediated effects within a single structural framework and comparing their relative contributions to identify the most influential pathway(s) linking coaching climate to performance judgements [12, 20, 54, 55]. The originality lies in modelling psychological safety, self-efficacy, and resilience concurrently, rather than in isolation, thereby offering a layered explanation that spans interpersonal coaching behaviours, contextual safety climate, and intrapersonal efficacy and resilient functioning, which together inform athletes' evaluations of their performance [21, 31, 56]. By situating psychological safety as an enabling condition for need satisfaction and exploratory mastery attempts, and by positioning self-efficacy and resilience as proximal self-regulatory resources, the work bridges SDT's need-supportive mechanisms with SCT's efficacy-centric account of motivated behaviour and performance appraisals [12, 53]. Tested with Turkish elite and elite-pathway athletes—where applied sport psychology is recognised yet under-implemented—the model delivers practically actionable implications for coach education, safeguarding, and everyday feedback practices [2, 37, 38].

The study addresses three gaps: first, the field lacks unified evidence on how psychological safety, self-efficacy, and resilience operate together—both in parallel and sequentially—to transmit the effects of coaching style to perceived performance [20, 56]; second, the negative cascade from controlling/thwarting behaviours to reduced safety, lower efficacy and resilience, and ultimately diminished performance perceptions has been comparatively under-tested [10, 13, 57]; third, there is limited comparative evidence on the relative weight of these mediators within one model, leaving uncertainty over which psychological route is most influential in competitive contexts [25, 58]. Building on evidence that need-supportive coaching enhances athletes' competence, motivation, and performance, and that high-quality coach–athlete relationships promote safety, trust, and effective risk-taking, we propose a set of hypotheses to be evaluated with SEM [22, 26, 28, 59].

We hypothesise that supportive coaching will positively predict perceived performance, while controlling coaching will negatively predict it [20, 25, 55]. We expect supportive (versus controlling) behaviours to increase (versus decrease) psychological safety, reflecting greater openness, trust, and protection from interpersonal risk [22, 26]. We anticipate that supportive coaching will bolster self-efficacy through structure, competence-relevant feedback, and autonomy support, whereas controlling behaviours will undermine it, consistent with SDT–SCT mechanisms [12, 44]. We further predict that supportive coaching will enhance psychological resilience by fostering adaptive coping, clarity of roles, and social support, while controlling style will erode these resources [32, 33, 60]. In turn, psychological safety should promote self-efficacy and resilience by enabling constructive risk-taking, non-punitive feedback exchange, and collaborative problem-solving [34–36]. Finally, we expect self-efficacy and resilience each to predict higher perceived performance, with the self-efficacy pathway exerting the most substantial indirect effect overall, and mirrored negative chains for controlling behaviours [50–52, 61, 62].

This study is grounded in SDT and Social Cognitive Theory (SCT), aiming to integrate these frameworks within two proposed conceptual models (Model 1, Model 2). Despite extensive evidence highlighting the impact of coaching behaviours, a notable gap remains in understanding the mediating roles of psychological safety, self-efficacy, and resilience in shaping perceived performance. Accordingly, this study proposes and empirically tests a conceptual model linking perceived coach behaviours to perceived performance through these mediators.

Model 1 posits that coaches' supportive behaviours have a positive influence on athletes' psychological characteristics (Fig. 1), whereas Model 2 suggests that controlling coaching behaviours lead to adverse psychological outcomes (Fig. 2). Based on the conceptual model grounded in Self-Determination Theory (SDT) and Social Cognitive Theory (SCT), the following hypotheses were developed. *H₁: Supportive and controlling coaching behaviours directly predict athletes' perceived performance.* This is supported by previous research indicating that autonomy-supportive coaching fosters intrinsic motivation and performance, while controlling behaviours hinder these outcomes. *H₂: Coaching behaviours directly predict athletes' perceived psychological safety.* This hypothesis is based on the understanding that supportive coaching climates enhance trust and open communication, thereby strengthening psychological safety. *H₃: Coaching behaviours directly predict athletes' self-efficacy.* Consistent with SCT, this hypothesis is grounded in the idea that constructive feedback and supportive coach–athlete interactions enhance self-efficacy through mastery experiences and verbal persuasion. *H₄: Coaching behaviours directly predict athletes' psychological resilience.* This is hypothesised because supportive coaching environments are known to foster coping mechanisms and adaptability, which contribute significantly to psychological resilience. *H₅: Psychological safety positively predicts self-efficacy.* The rationale here is that a psychologically safe environment allows athletes to take necessary interpersonal risks and develop confidence in their capabilities. *H₆: Psychological safety positively predicts psychological resilience.* This hypothesis is based on the premise that trust and emotional security facilitate

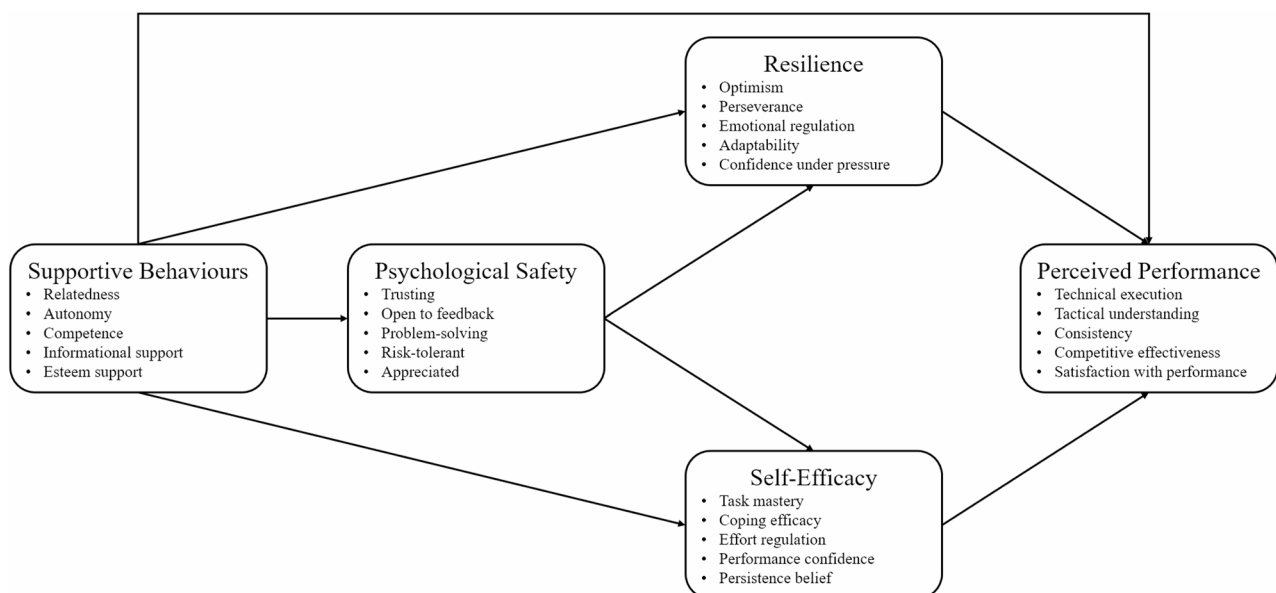


Fig. 1 The role of psychological safety, resilience, and self-efficacy in the relationship between supportive behaviours and perceived performance

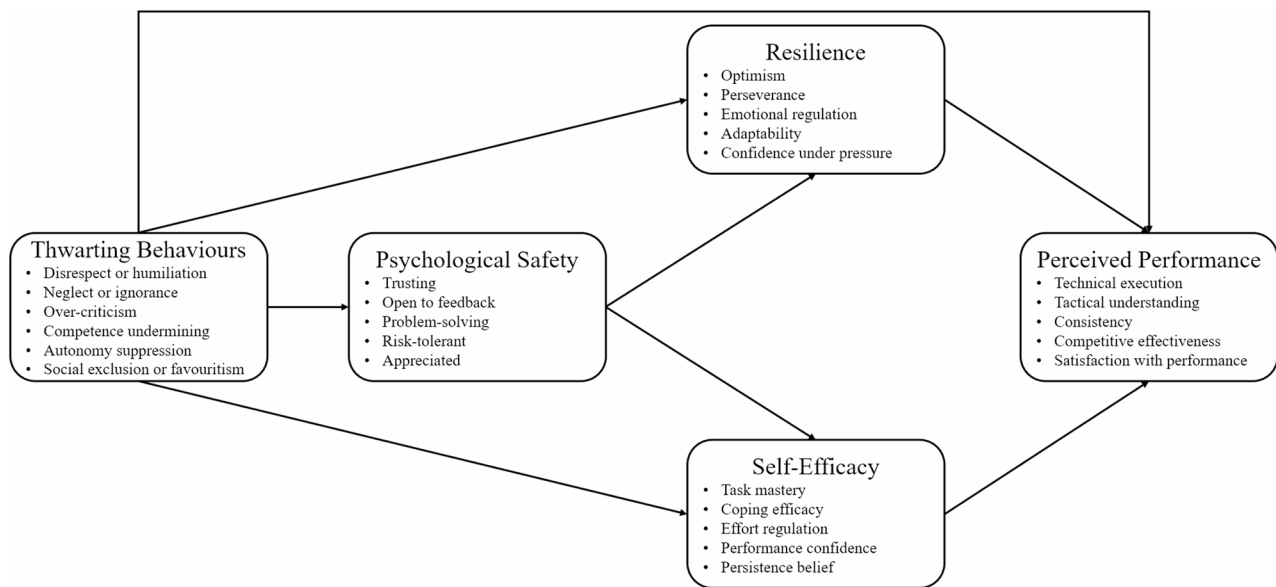


Fig. 2 The role of psychological safety, resilience, and self-efficacy in the relationship between thwarting behaviours and perceived performance

adaptive responses under pressure, thereby strengthening resilience. *H₇: Self-efficacy positively predicts perceived performance.* This is a well-established hypothesis, as empirical evidence consistently shows that self-efficacy is a robust predictor of performance and motivation in sport. *H₈: Psychological resilience positively predicts perceived performance.* This hypothesis is supported by findings that athletes with high resilience are better equipped to maintain consistent performance under stress and competitive pressure.

Method

Methodological design

This study employed a quantitative, cross-sectional, correlational design to examine the relationships between athletes' perceived coaching behaviours, psychological safety, self-efficacy, psychological resilience, and perceived performance. Data were collected via validated self-report questionnaires from 369 Turkish athletes across multiple sports and competition levels at a single time point, allowing for the assessment of direct and indirect associations within the proposed structural model.

We employed a convenience sampling approach, supplemented by purposive targeting, to recruit athletes who were readily accessible through clubs, university teams, and regional federations within a limited data collection window. Convenience sampling was selected due to its feasibility, given the geographic dispersion and in-season scheduling constraints. Purposive targeting ensured coverage across team and individual sports, as well as gender and competition tiers available within elite pathways. To align measurement with the selected constructs, inclusion required athletes to (a) be actively training/

competing, (b) have worked with the same coach for at least one year, and (c) have been in the same club for at least one year. Recruitment occurred across varied sites and time slots, using standardised Turkish instructions to minimise comprehension barriers. No disproportionate incentives were offered. All participants were elite or on elite pathways, which is central to the interpretability and external validity of our findings. Consequently, the target population for inference is elite Turkish athletes engaged in organised settings similar to our recruitment contexts. The sample was intended to be representative of this target population with respect to sport type (team vs. individual), gender, and competitive tier within elite structures. Given the non-probability sampling frame, findings should not be generalised to recreational or purely amateur athletes outside elite systems. Potential selection biases may persist for niche sports with limited regional presence and for athletes outside federation-affiliated programs. To enhance transparency and assess robustness, we report detailed participant distributions in the Participants section and include sensitivity analyses controlling for sport type, gender, and competition tier in the structural models.

Participants

The research included team ($n = 252$, 68.3%) and individual ($n = 117$, 31.7%) athletes ($\bar{X}_{\text{age}} \pm \text{SD} = 20.92 \pm 4.65$). Of the participants, 48.8% were female ($n = 180$) and 51.2% were male ($n = 189$). 52.8% of the athletes were amateurs ($n = 195$), and 47.2% were professionals ($n = 174$). 21.1% of the athletes reported being national athletes ($n = 78$). The athletes' average sporting experience was 8.13 ± 4.93 years, the number of weekly training sessions

was 4.42 ± 1.42 days, and the daily training time was 2.54 ± 1.37 h. The duration of working with the current coach was 3.80 ± 3.23 years, and the duration of being in the current club was 3.82 ± 3.19 years. As our measurements included the coach-athlete relationship and psychological safety, a condition was required that the participants had been working with the same coach for at least 1 year and had been in the same club for at least 1 year.

Measurements

Interpersonal behaviours in sport questionnaire (IBQ-Sport)

The IBQ-Sport [54] was used to assess the coach's supportive and thwarting behaviours. Specifically, 24 items measure three sub-dimensions of coach supportive behaviours: autonomy (4 items, e.g., "My coach gives me the freedom to make my own choices"), competence (4 items, e.g., "My coach tells me I can achieve things"), and relatedness (4 items, e.g., "My coach takes time to get to know me"). It also measures three sub-dimensions of coach thwarting behaviours: autonomy (4 items, e.g., "My coach pressures me to do things his/her way"), competence (4 items, e.g., "My coach points out that I will probably fail"), and relatedness (4 items, e.g., "My coach does not connect with me"). The validity and reliability analysis of the Turkish version of the IBQ-S was carried out by Yıldız and Şenel [63].

Psychological safety scale

The 7-item Psychological Safety Scale [64, 65] was used to assess athletes' perceptions of psychological safety in their teams. The scale includes items such as "It is safe to take a risk in this team" and "If I make a mistake in this team, it is not held against me." The psychometric properties of the Psychological Safety Scale have been found to be acceptable in previous studies [26, 30, 66]. Since there is no Turkish version of the scale adapted for sports, we conducted confirmatory factor analysis to examine its factor validity. The analyses showed good fit [$\chi^2 = 19.388$, $df = 10$, $\chi^2/df = 1.9$, CFI = 0.98, TLI = 0.96, RMSEA = 0.06, SRMR = 0.02].

General self-efficacy scale

The General Self-Efficacy Scale, developed by Schwarzer and Jerusalem [67] and adapted into Turkish by Yesilay et al. [68], was used as the measure of self-efficacy. The General Self-Efficacy Scale was developed to assess the understanding of perceived general self-efficacy, estimating the ability to cope with daily life disturbances and adapt after experiencing various stressful life events (<http://userpage.fu-berlin.de/health/engscal.htm>). The evaluation was calculated by averaging the 10 items on the scale. Confirmatory factor analysis was applied for the construct validity of the scale [$\chi^2 = 72.034$, $df = 33$, $\chi^2/$

$df = 2.18$, CFI = 0.96, TLI = 0.95, RMSEA = 0.07, SRMR = 0.03].

Brief resilience scale

The Brief Resilience Scale is a 5-point Likert-type scale developed by Smith et al. [69], consisting of 6 items. Items 2, 4, and 6 are reverse-coded. After reverse scoring, higher scores indicate higher levels of psychological resilience. Confirmatory factor analysis was applied for the construct validity of the scale [$\chi^2 = 5.062$, $df = 6$, $\chi^2/df = 0.84$, CFI = 0.99, TLI = 0.99, RMSEA = 0.00, SRMR = 0.00]. Doğan [70] conducted the Turkish adaptation of the scale.

Perceived performance scale

We developed a four-item measurement to assess athletes' perception of their performance. The general performance perception measurement was used to assess athletes' overall perceptions of their current performance. The instrument consists of four items (i.e., "I generally perform well") and is calculated by scoring athletes' subjective evaluations of their current performance ($\chi^2 = 6.04$, $df = 2$, $\chi^2/df = 3.02$, CFI = 0.95, RMSEA = 0.18, SRMR = 0.05, McDonald's $\omega = 0.77$, Cronbach's $\alpha = 0.76$).

Data collection process

The data were collected through an online questionnaire administered to athletes via Google Forms. Before launching the survey, the researchers contacted coaches, athletes, and team managers via email and phone to explain the study's purpose and request their cooperation in distributing the questionnaire. Once contact was established, the online survey link was shared with those who met the inclusion criteria and expressed interest in participating. Athletes who volunteered to participate accessed the questionnaire through the provided link and completed it individually at their own convenience. Participation was entirely voluntary, and informed consent was obtained electronically before proceeding to the main section of the questionnaire. Respondents were assured that their data would remain anonymous and confidential and that they could withdraw from the study at any stage without any consequence. The questionnaire took approximately 10–15 min to complete. No incentives were offered for participation. Responses were screened for completeness, and only fully completed questionnaires were included in the final analysis.

Pilot study

Before the main data collection, a pilot study was conducted with 35 athletes to ensure that the proposed model and the measurement instruments functioned effectively within the intended research context. The primary purpose of the pilot test was to assess the clarity

of the items, the comprehensibility of the instructions, and the feasibility of the online administration process. The pilot study also allowed the researchers to run preliminary analyses to examine whether the hypothesised model operated as expected and to detect any potential issues in data collection or item interpretation. Conducting this preliminary stage helped to avoid unnecessary time and resource loss during the full-scale study and provided an opportunity to make minor wording adjustments to enhance item clarity and consistency. The pilot results indicated that the scales were understandable and the model structure worked as intended, confirming the suitability of the instruments and the procedure for the primary data collection phase.

Analysis

To ensure the integrity of our study, we conducted a comprehensive examination of the data. This included analysing patterns of missing data and assessing the normality of our data by examining skewness and kurtosis scores [71]. Means, standard deviations, skewness, and kurtosis values, as well as Pearson correlations, were calculated using SPSS 26.0. Two models were tested: Model 1 tested perceived coach supportive behaviour as a predictor of perceived performance (outcome), with psychological safety, self-efficacy, and psychological resilience as mediators; Model 2 tested perceived coach thwarting behaviour as a predictor of perceived performance (outcome), with psychological safety, self-efficacy, and psychological resilience as mediators. These analyses were conducted using IBM AMOS[®], employing the delta method for standard errors, normal theory confidence intervals, and the maximum likelihood estimator, with bias-corrected 95% confidence intervals estimated for all effects. Our analytical approach commenced with Confirmatory Factor Analyses (CFAs) to establish the measurement properties of our latent constructs, including perceived coaching behaviours (supportive and controlling), psychological safety, self-efficacy, psychological resilience, and perceived performance. The primary purpose of these CFAs was to validate the factorial structure and ensure adequate discriminant validity among these theoretically distinct yet related variables, thereby confirming their suitability for subsequent structural modelling. Following the successful validation of our measurement model, path analyses were conducted to address our research questions directly. These analyses specifically examined the direct effects of coaching behaviours on perceived performance, as well as the indirect effects mediated by psychological safety, self-efficacy, and psychological resilience. By testing these hypothesised pathways, the path analyses allowed us to rigorously evaluate the proposed structural relationships and determine the extent to which our psychological mediators explained

the influence of coaching behaviours on athletes' performance perceptions.

User-defined estimates are created by entering syntax prepared by the researcher into the programme when there are multiple mediating variables and the predictor variable has several indirect effects on the outcome variable. The purpose here is to examine the contributions to the overall effect by calculating observations that the programme does not compute itself. The methodological design was strengthened to clarify representativeness and sampling procedures, with the sample defined as elite athletes in Türkiye across multiple sports and competitive levels. This delineates the population to which inferences most appropriately apply, while cautioning against generalisation to recreational or purely amateur athletes. The sampling frame employed convenience sampling supplemented by purposive quotas to enhance heterogeneity across salient characteristics (e.g., sex, sport type, age, and years of experience). Recruitment was conducted through clubs and sports organisations, using predefined eligibility criteria and obtaining informed consent. The section is organised under target population and representativeness, sampling technique and rationale, recruitment procedures, diversity and inclusion strategies, and generalisability and limitations, to improve transparency and reproducibility. For measurement model evaluation, confirmatory factor analysis (CFA) fit was assessed using multiple indices considered jointly in line with established guidance, interpreting CFI and TLI values ≥ 0.95 as indicative of good fit [72, 73], RMSEA ≤ 0.06 as good and 0.06–0.08 as acceptable depending on model complexity and sampling variation [72, 74, 75], and SRMR ≤ 0.08 as good [72], while treating such thresholds as heuristics contingent on context, model complexity, estimation method, and sample characteristics rather than immutable cut-offs [76, 77].

Results

Descriptive statistics and correlation analyses

Table 1 shows the correlations, means, standard deviations, and reliability coefficients for the variables. The mean value in the supportive behaviours variable indicates that athletes perceive their coaches' behaviours as supportive ($M=5.93$), while the mean in thwarting behaviours confirms this finding ($M=2.35$). Moreover, the mean scores indicate that athletes feel relatively psychologically safe ($M=5.42$). Additionally, it was observed that athletes have a high level of self-efficacy perception ($M=5.73$) and exhibit psychological resilience ($M=4.71$). Athletes' perceptions of their overall performance are also quite high ($M=5.84$). Correlation analysis showed a negative relationship between supportive behaviours and thwarting behaviours ($r = -0.56$, $p < 0.01$), while revealing a positive relationship between psychological

Table 1 Summary of bivariate correlations, means, standard deviations, reliability, skewness, and kurtosis scores

	$\bar{X} \pm ss$	Skew.	Kur.	α	1	2	3	4	5
Supportive Behaviour	5.93 $\pm$ 1.27	-1.73	2.86	0.95	-				
Thwarting Behaviour	2.35 $\pm$ 1.36	1.52	2.09	0.91	-0.56**	-			
Psychological Safety	5.42 $\pm$ 1.26	-0.70	-0.12	0.80	0.57**	-0.49**	-		
Self-Efficacy	5.73 $\pm$ 1.05	-0.97	0.71	0.88	0.51**	-0.27**	0.39**	-	
Psychological Resilience	4.71 $\pm$ 1.37	-0.28	-0.08	0.81	0.31**	-0.28**	0.33**	0.51**	-
Perceived Performance	5.84 $\pm$ 1.03	-1.27	2.25	0.68	0.49**	-0.28**	0.38**	0.56**	0.38**

** $p < 0.01$

safety ($r = 0.57$, $p < 0.01$), self-efficacy ($r = 0.51$, $p < 0.01$), psychological resilience ($r = 0.31$, $p < 0.01$), and perceived performance ($r = 0.49$, $p < 0.01$). Furthermore, a negative relationship was found between thwarting behaviours and psychological safety ($r = -0.49$, $p < 0.01$), self-efficacy ($r = -0.27$, $p < 0.01$), psychological resilience ($r = -0.28$, $p < 0.01$), and perceived performance ($r = -0.28$, $p < 0.01$). Finally, a positive relationship was determined between psychological safety and self-efficacy ($r = 0.39$, $p < 0.01$), psychological resilience ($r = 0.33$, $p < 0.01$), and perceived performance ($r = 0.38$, $p < 0.01$). A positive relationship was identified between self-efficacy and psychological resilience ($r = 0.51$, $p < 0.01$) and perceived performance ($r = 0.56$, $p < 0.01$). The relationship between psychological resilience and perceived performance is also positive ($r = 0.38$, $p < 0.01$).

Measurement model

Initially, we tested the 5-factor two measurement models we created in confirmatory factor analysis (SEM step 1) by assessing the relationships of the items/variables analysed with their latent factors. Acceptable levels of fit indices were found for measurement model 1 [$\chi^2(656) = 469.326$, $\chi^2/df = 2.24$, CFI = 0.91, TLI = 0.90, RMSEA = 0.06 (95% C.I.: 0.05–0.06)]. Similar results were found for measurement model 2 [$\chi^2(662) = 1420.014$, $\chi^2/df = 2.14$, CFI = 0.90, TLI = 0.89, RMSEA = 0.05 (95% C.I.: 0.05–0.06)]. Since each regression coefficient was statistically significant, internal consistency and structural properties were also found to be adequate. The composite reliability coefficients are as follows: SB = 0.94, TB = 0.91, SE = 0.89, PS = 0.75, PR = 0.77, PP = 0.75. The AVEs are as follows: : SB = 0.59, TB = 0.91, SE = 0.55, PS = 0.69, PR = 0.56, PP = 0.59. We used the Unmeasured Latent Method Construct to test if the data had common method bias. Results showed that CMB is not an issue for our models. In this sense, the latent model was accepted and verified, thus allowing the second step to be performed (SEM step 2). Therefore, the measurement of the structural model was started.

Structural model

In this context, two structural models were proposed. Model 1 proposes that the coach's supportive behaviours

affect perceived performance through psychological safety, self-efficacy, and psychological resilience, while Model 2 includes the coach's thwarting behaviours as a predictor variable.

As theoretically proposed, positive and direct effects were identified between the variables in Model 1 (Fig. 3): the coach's supportive behaviours positively predicted psychological safety ($\beta = 0.56$; $R^2 = 0.32$), self-efficacy ($\beta = 0.34$; $R^2 = 0.26$), psychological resilience ($\beta = 0.19$; $R^2 = 0.13$), and perceived performance ($\beta = 0.21$; $R^2 = 0.38$). Psychological safety positively predicted self-efficacy ($\beta = 0.12$) and psychological resilience ($\beta = 0.25$), and subsequently, self-efficacy and psychological resilience influenced perceived performance ($\beta = 0.36$; $\beta = 0.08$; $R^2 = 0.38$, respectively) (Table 2).

However, in this model, the direct effect between psychological resilience and perceived performance was not statistically significant. Next, we began to examine specific indirect pathways. The coach's supportive behaviours indirectly affected self-efficacy (0.070, $p > 0.05$) and psychological resilience (0.14, $p < 0.05$) through psychological safety; ultimately, an indirect effect was observed on perceived performance (0.18, $p < 0.05$). In Model 1, the pathway from the coach's supportive behaviour through psychological safety and self-efficacy was not statistically significant. Since Model 1 included unspecified indirect pathways, user-defined estimates were calculated. Table 2 presents the direct and indirect effects of the proposed first model, along with user-defined estimates. Supportive behaviour, self-efficacy, psychological resilience, and psychological safety, as well as self-efficacy and psychological safety, indirectly affected perceived performance (0.12, $p < 0.05$; 0.01, $p > 0.01$; 0.01, $p > 0.05$; 0.02, $p < 0.01$, respectively). In Model 1, the total indirect effect was 0.18 (95% CI: 0.11–0.25), and the total effect was 0.39 (95% CI: 0.25–0.54). The results are statistically significant.

In the second theoretical model, positive and direct effects were identified between the variables (Fig. 4): the coach's thwarting behaviours negatively predicted psychological safety ($\beta = -0.44$; $R^2 = 0.23$), self-efficacy ($\beta = -0.08$; $R^2 = 0.15$), psychological resilience ($\beta = 0.16$; $R^2 = 0.13$), and perceived performance ($\beta = -0.09$; $R^2 = 0.34$). However, the parameter between thwarting behaviours and self-efficacy was not statistically significant.

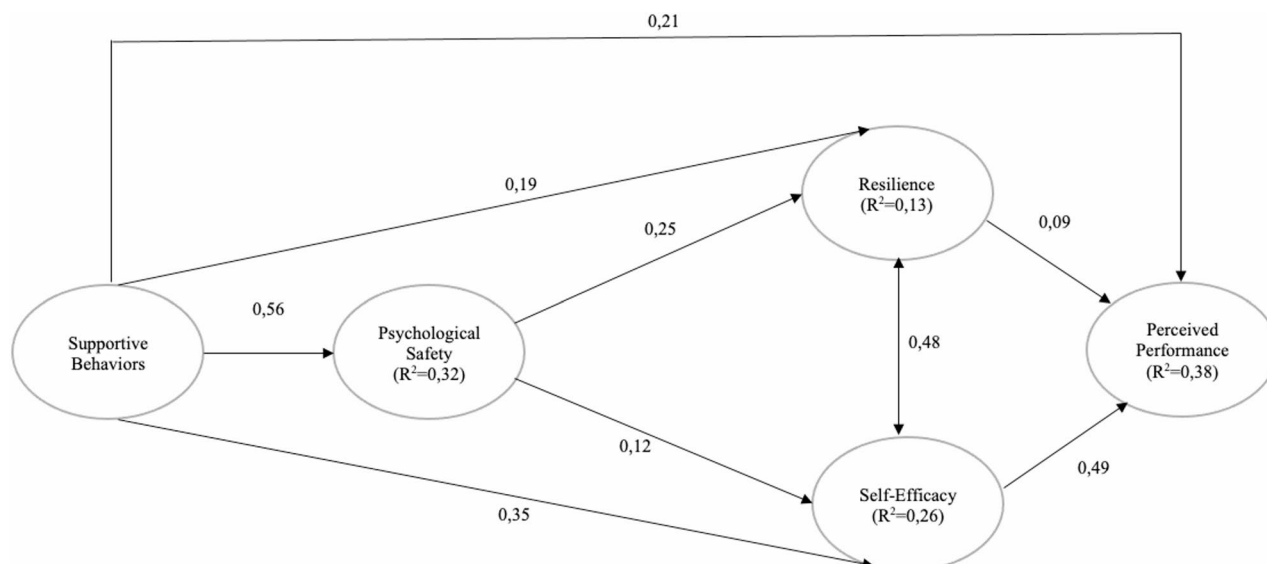


Fig. 3 The role of psychological safety, self-efficacy, and psychological resilience in the relationship between the coach's supportive behaviours and perceived performance. Standardised coefficients are shown

Psychological safety positively predicted self-efficacy ($\beta = 0.27$) and psychological resilience ($\beta = 0.27$), and subsequently, self-efficacy and psychological resilience influenced perceived performance ($\beta = 0.46$; $\beta = 0.07$; $R^2 = 0.38$, respectively) (Table 3).

However, in this model, the direct effect between psychological resilience and perceived performance was not statistically significant. Next, we began to examine specific indirect pathways. The coach's thwarting behaviours indirectly affected self-efficacy (-0.12 , $p > 0.05$) and psychological resilience (-0.12 , $p < 0.05$) via psychological safety; ultimately, an indirect effect was observed on perceived performance (-0.12 , $p < 0.05$). In Model 2, the pathway from the coach's thwarting behaviour through psychological safety and self-efficacy was not statistically significant. Since Model 2 included unspecified indirect pathways, user-defined estimates were calculated. Table 3 presents the direct and indirect effects of the proposed second model, along with user-defined estimates. User-defined estimates are created by entering syntax prepared by the researcher into the programme when there are multiple mediating variables and the predictor variable has several indirect effects on the outcome variable. Thwarting behaviour, self-efficacy, psychological resilience, and psychological safety, as well as self-efficacy and psychological safety, indirectly affected perceived performance (-0.03 , $p > 0.05$; -0.01 , $p > 0.01$; 0.03 , $p > 0.05$; 0.05 , $p < 0.01$, respectively), although some pathways were not statistically significant. In Model 2, the total indirect effect was -0.12 (95% CI: -0.24 to -0.05), and the total effect was -0.13 (95% CI: -0.21 to -0.07). The results are statistically significant.

Discussion

This study aimed to empirically examine the impact of athletes' perceived coaching behaviours (both supportive and controlling) on their perceived performance, with particular attention to the mediating roles of psychological safety, self-efficacy, and psychological resilience. The findings of this study indicate that athletes' perceptions of coaching behaviours significantly influence their performance perceptions through psychological resources such as psychological safety, self-efficacy, and psychological resilience. Recent research has highlighted the impact of psychological safety and supportive coaching behaviours in sports environments, emphasising their effects on both the psychological well-being and performance outcomes of athletes [21, 25, 56].

In particular, coaching behaviours that support athletes' needs for autonomy, competence, and relatedness appear to enhance motivation and perceived performance [20, 55]. This finding aligns with current meta-analyses within the framework of SDT, which reveal that fulfilling basic psychological needs strengthens athletes' intrinsic motivation and self-efficacy [25]. Indeed, a qualitative study by Nicol and Allen [28] involving professional footballers demonstrated that coaches' structured and supportive feedback directly influenced athletes' perceptions of competence and performance. Similarly, research indicates that perceived coaching behaviours are closely linked to the fulfilment of these psychological needs, which are foundational to intrinsic motivation and sport commitment [78, 79]. Koka et al. [58] argue that the relationship between coaching behaviours and athletic performance can be effectively understood through the SDT framework, whereby supportive coaching enhances motivation

Table 2 Coefficients for the direct and indirect effects in model 1

Independent Variable	Mediator(s)	Dependent Variable	Unstandardised Estimates	Standardised Estimates	p
Indirect Effects					
Supportive Behaviour	Psychological Safety	Self-Efficacy	0.070	0.084	$p > 0.05$
		Psychological Resilience	0.143	0.132	$p < 0.01^{**}$
	Psychological Safety, Self-Efficacy, and Psychological Resilience	Perceived Performance	0.180	0.221	$p < 0.01^{**}$
Psychological Safety	Self-Efficacy and Psychological Resilience	Perceived Performance	0.066	0.080	$p < 0.01^{**}$
User-Defined Indirect Effect					
Supportive Behaviour	Self-Efficacy	Perceived Performance	0.127	0.156	$p < 0.01^{**}$
	Psychological Resilience	Perceived Performance	0.016	0.019	$p > 0.05$
	Psychological Safety and Psychological Resilience	Perceived Performance	0.011	0.014	$p > 0.05$
	Psychological Safety and Self-Efficacy	Perceived Performance	0.026	0.031	$p < 0.05^*$
Direct Effects					
Supportive Behaviour	—	Psychological Safety	0.565	0.567	$p < 0.01^{**}$
	—	Self-Efficacy	0.348	0.417	$p < 0.01^{**}$
	—	Psychological Resilience	0.194	0.179	$p < 0.01^{**}$
	—	Perceived Performance	0.216	0.266	$p < 0.01^{**}$
Psychological Safety	—	Self-Efficacy	0.125	0.149	$p > 0.05$
	—	Psychological Resilience	0.253	0.232	$p < 0.01^{**}$
Self-Efficacy	—	Perceived Performance	0.365	0.375	$p < 0.01^{**}$
Psychological Resilience	—		0.080	0.107	$p > 0.05$

$\chi^2 = 1.56$ $df = 1$ $\chi^2/df = 1.56$, $CFI = 0.99$, $TLI = 0.98$, $IFI = 0.99$, $GFI = 0.99$, $AGFI = 0.99$, $RMSEA = 0.04$, $SRMR = 0.01$ Total Indirect Effect = 0.180 (95%CI 0.110–0.255); Total Effect = 0.396 (95%CI 0.259–0.542); $p < 0.01$ Mardia's Coefficient: 11,792 (c.r. 10,780)

and performance by satisfying athletes' needs for autonomy, competence, and relatedness. Kassim and Boardley [59] found that effective communication regarding technical and tactical development fosters a greater sense of competence among athletes, leading to improved performance. Our findings are consistent with these results, which suggest that supportive coaching behaviours have a positive impact on perceived performance.

Our study found that psychological safety has a direct and indirect effect (via self-efficacy and psychological resilience) on performance perception. This result corresponds with findings that psychological safety promotes team communication, risk-taking behaviour, and innovation, thereby enhancing individual and team performance [34, 36]. Furthermore, it has been demonstrated that psychological safety enhances athletes' ability to cope with stress and make informed decisions under pressure, thereby strengthening their psychological resilience [31, 32]. Lundqvist et al. [80] emphasised that perceived psychological safety is essential for maintaining mental health among elite athletes, particularly in balancing the dual demands of athletic responsibilities. Similarly, Ojio et al. [81] highlighted that psychologically safe and supportive environments are associated with improvements in both physical and mental health, which

are fundamental to optimal athletic functioning. Taken together, these findings underscore the importance of cultivating psychologically safe environments within elite sport settings—not only to enhance perceived performance but also to support athletes' holistic development and well-being.

Self-efficacy stands out as one of the strongest predictors of performance in sports psychology. Recent studies suggest that the quality of coach-athlete relationships has a positive impact on athletes' self-efficacy and, consequently, their performance outcomes [27, 29]. Specifically, supportive and trusting relationships reinforce athletes' belief in themselves, enabling them to be more resilient and motivated in challenging situations [60]. Baretta et al. [50] emphasise that athletes with higher self-efficacy beliefs tend to excel in their sports tasks. This notion aligns with SCT, which suggests that one's belief in their capabilities is crucial for achieving performance [53]. Moreover, Besharat and Pourbohloul [51] found that sport self-efficacy acts as a buffer against competitive anxiety, enhancing performance in stressful situations. Athletes with high self-efficacy are more likely to tackle challenging tasks with resilience, which positively influences their performance perceptions. This is further supported by findings from Gernigon and Delloye [52], who

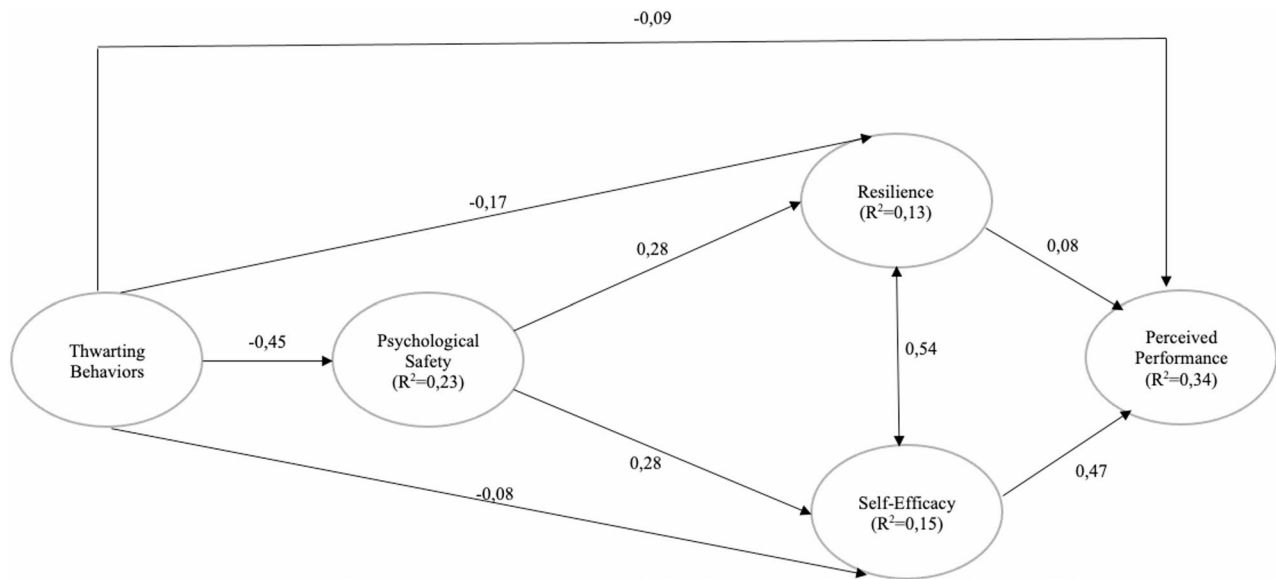


Fig. 4 The role of psychological safety, self-efficacy, and psychological resilience in the relationship between the coach's supportive behaviours and perceived performance. Standardised coefficients are shown

noted that self-efficacy influences how athletes respond to both success and failure, shaping their performance outlook. Our findings emphasise that self-efficacy has a positive effect on shaping sports performance.

Psychological resilience emerges as a key element determining athletes' capacity to adapt to challenges and maintain their performance [33, 82]. Recent profile analyses have shown that athletes with high psychological resilience exhibit higher levels of well-being and performance [60]. Barczak-Scarboro et al. [61] emphasise that psychological resilience enables athletes to adapt their responses to challenges, which in turn allows them to maintain performance levels despite high-stress situations. Resilient athletes are better equipped to handle competitive pressure, resulting in a more optimistic performance perception [83]. The capacity to utilise these mental strategies enhances athletes' resilience and, subsequently, their perception of performance under duress. Kumbar and Patil [84] suggest that resilient athletes are likely to engage more effectively with their environment, resulting in enhanced performance perceptions. Li and Pan [62] suggest that resilience serves as a mediator that ultimately influences achievement motivation. Increased resilience leads to heightened motivation, enabling athletes to experience flow states during competitions that improve performance outcomes. In this context, our finding that supportive coaching behaviours and psychological safety strengthen psychological resilience and positively influence performance perception is consistent with current literature.

Another significant finding of our study is that thwarting coaching behaviours negatively impacts psychological safety, self-efficacy, and psychological resilience, thereby

reducing performance perception. This result aligns with findings by Şenel et al. [26] and Isoard-Gautheur et al. [85], which indicate that supportive coaching styles are associated with a lower level of burnout. Furthermore, athletes who perceive controlling coaching behaviours tend to report lower satisfaction with their basic psychological needs [86]. In line with these findings, Morales-Sánchez et al. [57] demonstrated that a controlling coaching style positively predicts the thwarting of basic psychological needs, which in turn predicts burnout.

Our study demonstrates that supportive behaviours exhibited by coaches play a central role in meeting athletes' psychological needs and strengthening their performance perceptions. In particular, psychological safety and self-efficacy mediate the shaping of performance perception, while psychological resilience supports this process. These findings highlight the importance of interventions that promote psychological safety, self-efficacy, and resilience in coach education within the field of sports psychology.

Theoretical implication

The present study provides theoretical enrichment to self-determination theory (SDT) and social cognitive theory (SCT) by integrating psychological safety, self-efficacy, and psychological resilience into the explanatory model connecting perceived coaching behaviours with athletes' performance perceptions. From the perspective of SDT, the findings extend the theory beyond traditional motivational constructs by demonstrating how supportive environmental conditions foster psychological safety. This antecedent state allows athletes' basic psychological needs for autonomy, competence, and relatedness to be

Table 3 Coefficients for the direct and indirect effects in model 2

Independent Variable	Mediator(s)	Dependent Variable	Unstandardised Estimates	Standardised Estimates	<i>p</i>
Indirect Effects					
Thwarting Behaviour	Psychological Safety	Self-Efficacy	−0,125	−0,161	<i>p</i> < 0,01
		Psychological Resilience	−0,124	−0,123	<i>p</i> < 0,01
	Psychological Safety, Self-Efficacy, and Psychological Resilience	Perceived Performance	−0,120	−0,158	<i>p</i> < 0,01
Psychological Safety	Self-Efficacy and Psychological Resilience	Perceived Performance	−0,151	0,185	<i>p</i> < 0,01
User-Defined Indirect Effect					
Thwarting Behaviour	Self-Efficacy	Perceived Performance	−0,039	−0,040	<i>p</i> > 0,05
	Psychological Resilience	Perceived Performance	−0,013	−0,016	<i>p</i> > 0,05
	Psychological Safety and Psychological Resilience	Perceived Performance	−0,038	−0,028	<i>p</i> > 0,05
	Psychological Safety and Self-Efficacy	Perceived Performance	−0,058	−0,076	<i>p</i> < 0,05
Direct Effects					
Thwarting Behaviour	—	Psychological Safety	−0,449	−0,484	<i>p</i> < 0,01
	—	Self-Efficacy	−0,085	−0,109	<i>p</i> > 0,01
	—	Psychological Resilience	−0,166	−0,164	<i>p</i> < 0,01
	—	Perceived Performance	−0,092	−0,121	<i>p</i> > 0,01
Psychological Safety	—	Self-Efficacy	0,279	0,332	<i>p</i> > 0,05
	—	Psychological Resilience	0,277	0,254	<i>p</i> < 0,01
Self-Efficacy	—	Perceived Performance	0,466	0,478	<i>p</i> < 0,01
Psychological Resilience	—		0,076	0,101	<i>p</i> > 0,05

$\chi^2 = 5.82$, $df = 1$, $\chi^2/df = 5.82$, $CFI = 0.98$, $TLI = 0.82$, $IFI = 0.98$, $GFI = 0.99$, $AGFI = 0.85$, $RMSEA = 0.144$; $SRMR = 0.02$ Total Indirect Effect = -0.120 (-0.204 – -0.057); Total Effect = -0.130 (-0.212 – -0.048); $p < 0,01$; Mardia's Coefficient = 10.7378 (c.r. 9,488)

fulfilled [20, 25, 55, 58]. This highlights that need-supportive coaching not only enhances intrinsic motivation but also establishes a psychologically secure context in which athletes can engage in adaptive learning and sustained performance regulation.

Within the SCT framework, this research highlights self-efficacy as a central self-regulatory mechanism, situating it within a broader network of contextual and psychological influences [53]. By incorporating environmental factors such as perceived coaching style and climate, the study extends SCT to emphasise that self-efficacy beliefs develop not only through mastery and verbal persuasion but also through the presence of psychological safety and emotional resilience. This multi-layered interpretation refines the theoretical links between cognitive appraisals, motivation, and behavioural performance.

By integrating motivational (SDT) and cognitive–social (SCT) perspectives, the study contributes a more holistic model of athlete development that recognises the interplay between interpersonal support, individual belief systems, and adaptive psychological processes. Introducing psychological safety and resilience as connecting constructs between the two theoretical traditions advances conceptual understanding in sport psychology, as it positions these constructs as essential mechanisms that

translate coaching climate into perceived performance. Thus, the study bridges existing motivational and cognitive paradigms, offering a unified theoretical framework that accounts for both the interpersonal and intrapersonal determinants of perceived athletic performance.

Practical implications

The findings offer several evidence-based recommendations for enhancing athlete performance and well-being through supportive coaching practices. Coaches should prioritise creating autonomy-supportive and trust-based environments that address athletes' fundamental psychological needs for autonomy, competence, and relatedness. The evidence from this study suggests that such environments foster psychological safety, enhance self-efficacy, and promote resilience, collectively contributing to improved performance perceptions.

At the individual coaching level, adopting communication strategies that enable open dialogue and non-punitive feedback can be highly effective. Implementing structured feedback sessions, reflection meetings, or one-on-one progress reviews provides athletes with opportunities to express concerns and receive targeted guidance without fear of criticism. These practices, supported by the present findings, can enhance psychological safety, which in turn can improve self-efficacy and

motivation. Similarly, embedding competence-oriented feedback—focusing on effort, improvement, and learning outcomes—supports athletes' perceived mastery and fosters resilient responses to competitive challenges.

At the organisational level, sport institutions should integrate psychological safety and need-supportive approaches into coaching education and continuous professional development. Training programmes should include modules on effective feedback, autonomy-supportive coaching, and the identification of controlling or need-thwarting behaviours that may undermine athletes' motivation and well-being. Regular assessment of athletes' psychological states using validated instruments—such as scales measuring psychological safety, self-efficacy, and resilience—can facilitate early intervention when performance or well-being risks are identified.

Furthermore, the findings underline the necessity of comprehensive safeguarding and ethical frameworks to prevent controlling or coercive coaching practices. Institutional policies should explicitly define and discourage behaviours that harm athletes' psychological health and performance, ensuring accountability mechanisms within teams and organisations. By embedding these principles into coaching practice and policy development, sport systems can cultivate environments that not only enhance performance but also support holistic athlete development and long-term well-being.

Limitations and future research recommendations

The cross-sectional design limits causal inferences. Future studies should adopt longitudinal or experimental methods to confirm the directionality of relationships between coaching behaviours, psychological mediators, and performance perception. The sample's specific geographic and competitive characteristics restrict generalisability; thus, future studies with more diverse sports, cultural contexts, and competition levels are encouraged. By requiring athletes to work with the same coach and club for at least one year, the study enhanced relational consistency but reduced perceptual variability. Moreover, focusing on SDT and SCT excluded other relevant variables such as leadership style, family support, and team cohesion. Future longitudinal studies should explore how supportive coaching behaviours influence psychological safety and resilience across different sports and cultural contexts, and how these interact with team dynamics and leadership over time.

Conclusion

Supportive coaching behaviours enhance athletes' perceived performance by promoting psychological safety, self-efficacy, and resilience, while controlling behaviours diminish these outcomes. The results enrich SDT and SCT by integrating emotional and adaptive processes

into the understanding of performance perception. Practically, developing psychologically safe, autonomy-supportive environments can improve motivation, resilience, and well-being among athletes. Future research should employ longitudinal and cross-cultural approaches to validate these relationships and inform effective coaching education models.

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Authors' contributions

****DS**** : Project administration, Methodology, Investigation, Data curation, Conceptualisation, Formal analysis. ****EŞ**** : Writing – original draft, Validation, Conceptualisation, Writing – review and editing. ****KS**** : Methodology, Investigation, Data curation, Conceptualisation. ****GM**** : Writing – original draft, Validation, Writing – review and editing.

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Data availability

The data is available on [10.6084/m9.figshare.30001414](https://figshare.com/figures/data/10.6084/m9.figshare.30001414).

Declarations

Ethics approval and consent to participate

The Medical and Health Ethics Committee approved the study with decision number 230097/136 on November 9, 2023. All participants were informed about the study, and their consent was obtained prior to participation.

Competing interests

The authors declare no competing interests.

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References

1. Glazier PS. Towards a grand unified theory of sports performance. *Human movement science*. 2015;56:139–56. <https://doi.org/10.1016/j.humov.2015.08.001>
2. Erdoğan N, Kocaekşi S. Elit sporcuların Sahip olması Gereken Psikolojik özellikler. *Türkiye Klinikleri J Sports Sci*. 2015;7(2):57–64.
3. Turkan H, Demir A. Spor Psikolojisi üzerine Bir inceleme. *Yaşam Becerileri Psikoloji Dergisi*. 2021;5(10):119–31.
4. Güvendi B, Güçlü M, Işım AT. Psikolojik performans stratejileri uygulamalarının bazı bağımsız değişkenlere göre incelenmesi. *Turkish Studies*. 2019;14(3):1499–512.
5. Aydoğan H, Konaş Y. Sporda Psikolojik performans değerlendirme ölçeği geliştirme çalışması. *Spor Eğitim Dergisi*. 2022;6(1):74–87.
6. Olmedilla A, Torres-Luque G, García-Mas A, Rubio VJ, Ducoing E, Ortega E. Psychological profiling of triathlon and road cycling athletes. *Frontiers in Psychology*. 2018;9:825. <https://doi.org/10.3389/fpsyg.2018.00825>
7. Chun DR, Lee MY, Kim SW, Cho EY, Lee BH. The mediated effect of sports confidence on competitive state anxiety and perceived performance of basketball game. *International Journal of Environmental Research and Public Health*. 2022;20(1):334. <https://doi.org/10.3390/ijerph20010334>
8. Kalkan T, Sarı İ. Antrenör davranışları: Kuramsal yaklaşımlar, antrenörün sporcuya Etkisi ve öneriler. *Eğzersiz Ve Spor Bilimleri Araştırmaları Dergisi*. 2021;1(1):41–54.
9. Gordon D. *Coaching Science*. Exeter: Learning Matters; 2009.
10. Lefever E, Flamant N, Morbée S, Soenens B, Vansteenkiste M, Ntoumanis N, et al. Does a closer coach-athlete bond buffer or exacerbate the detrimental effects of controlling coaching on athletes' coping and outcomes? *International Journal of Sports Science & Coaching*. 2025;20(1):56–69. <https://doi.org/10.1177/17479541241287433>

11. Rocchi M, Pelletier L. How does coaches' reported interpersonal behavior align with athletes' perceptions? Consequences for female athletes' psychological needs in sport. *Sport, Exercise, and Performance Psychology*. 2018;7(2):141–54.
12. Ryan RM, Deci EL. *Self-Determination Theory: Basic Psychological Needs in Motivation, Development, and Wellness*. New York: Guilford Publications; 2017. <https://doi.org/10.1521/978.14625/28806>
13. Simon JE, Yahaya I, Itse YI, Uzoigwe TL. Soccer athlete resilience: the impact of controlling coaching style, humor, and perfectionism. *Journal of Research and Development*. 2024;9(1):5–10.
14. Almagro BJ, Sáenz-López P, Fierro-Suero S, Conde C. Perceived performance, intrinsic motivation and adherence in athletes. *International Journal of Environmental Research Public Health*. 2020;17(24):9441. <https://doi.org/10.3390/ijerph17249441>
15. Dewar AJ, Kavussanu M. Achievement goals and emotions in golf: the mediating and moderating role of perceived performance. *Psychology of Sport and Exercise*. 2011;12(5):525–532. <https://doi.org/10.1016/j.psychsport.2011.05.005>
16. Lee E, Shin J. The effects of performance routine on competitive state anxiety, psychological skills, and perceived performance of Taekwondo Poomsae players. *International Journal of Applied Sport Science*. 2016;28(2):184–199. <https://doi.org/10.24985/ijass.2016.28.2.184>
17. Lourenço J, Almagro BJ, Carmona-Márquez J, Sáenz-López P. Predicting perceived sport performance via self-determination theory. *Perceptual and Motor Skills*. 2022;129(5):1563–1580. <https://doi.org/10.1177/00315125221119121>
18. Luthar SS, Cicchetti D. The construct of resilience: implications for interventions and social policies. *Development and Psychopathology*. 2000;12:857–885. <https://doi.org/10.1017/S0954579400004156>
19. Çetiner HB, Tolukan E. Sporcuların Zihinsel dayanıklılık düzeyinin antrenör-sporcu ilişkisine Etkisinde Temel Psikolojik ihtiyaçların aracılık rolü. *CBÜ Beden Eğitimi Ve Spor Bilimleri Dergisi*. 2023;18(2):813–829. <https://doi.org/10.33459/cbubesbd.1219508>
20. Slemp GR, Field JG, Ryan RM, Forner VW, Van den Broeck A, Lewis KJ. Interpersonal supports for basic psychological needs and their relations with motivation, well-being, and performance: a meta-analysis. *Journal of Personality and Social Psychology*. 2024;127(5):1012–1037. <https://doi.org/10.1037/pspi0000459>
21. Jowett S, Do Nascimento-Junior JRA, Zhao C, Gosai J. Creating the conditions for psychological safety and its impact on quality coach-athlete relationships. *Psychology of Sport and Exercise*. 2023;65:102363. <https://doi.org/10.1016/j.psychsport.2022.102363>
22. Şenel E, Jowett S, Adiloğulları İ, Kerr-Cumbo R. Investigating the impact of coach behaviours and coach-athlete relationships on psychological safety. *International Journal of Sport and Exercise Psychology*. 2024;23(7):10511–106515. <https://doi.org/10.1080/1612197X.2024.2369717>
23. Kaygıusuz Ş, Şenses HR, Uslu T. Futbolcuların psikolojik performans profillerinin antrenörleri ile ilişkilerine yönelik kullandıkları metaforlar ile karşılaştırılması. *SPORMETRE Beden Eğitimi Ve Spor Bilimleri Dergisi*. 2021;19(2):87–101. <https://doi.org/10.33689/spormetre.772486>
24. Holt L. Interpersonal relationships and the association with athletes' motivation, self-efficacy and fear of failure. Doctoral dissertation. Ithaca, NY: Ithaca College; 2013.
25. Mossman LH, Slemp GR, Lewis KJ, Colla RH, O'Halloran P. Autonomy support in sport and exercise settings: a systematic review and meta-analysis. *International Review of Sport and Exercise Psychology*. 2024;17(1):540–563. <https://doi.org/10.1080/1750984X.2022.2031252>
26. Şenel E, Küttel A, Adiloğulları İ, Jowett S. Psychological predictors of mental well-being in Judo athletes: exploring the impacts of the coach-athlete relationship, social support, and psychological safety. *Psychology of Sport and Exercise*. 2025;79:102850. <https://doi.org/10.1016/j.psychsport.2025.102850>
27. Mercader-Rubio I, Ángel NG, Silva S, Brito-Costa S. Levels of somatic anxiety, cognitive anxiety, and self-efficacy in university athletes from a Spanish public university and their relationship with basic psychological needs. *International Journal of Environmental Research and Public Health*. 2023;20(3):2415. <https://doi.org/10.3390/ijerph20032415>
28. Nicol K, Allen JB. Coaches' provision of structure for players' competence development: perspectives of professional soccer coaches and players in Norway. *International Sport Coaching Journal*. 2024;12(3):411–421. <https://doi.org/10.1123/iscj.2023-0038>
29. Vieira JLL, Ferreira L, Cheuczuk F, Flores PP, Vissoci JRN, Rocha FF, Nascimento Junior JRA, Vieira LF. Impact of coach-athlete relationship on the collective efficacy of young volleyball players. *Revista Brasileira de Cineantropometria e Desempenho Humano*. 2015;17(6):650–660. <https://doi.org/10.5007/1980-0037.2015v17n6p650>
30. Fransen K, McEwan D, Sarkar M. The impact of identity leadership on team functioning and well-being in team sport: is psychological safety the missing link? *Psychology of Sport and Exercise*. 2020;51:101763. <https://doi.org/10.1016/j.psychsport.2020.101763>
31. Gupta S, McCarthy PJ. The sporting resilience model: a systematic review of resilience in sport performers. *Frontiers in Psychology*. 2022;13:1003053. <https://doi.org/10.3389/fpsyg.2022.1003053>
32. Karayel E, Adilogullari I, Senel E. The role of transformational leadership in the associations between coach-athlete relationship and team resilience: a study on elite football players. *BMC Psychology*. 2024;12(1):514. <https://doi.org/10.1186/s40359-024-02043-7>
33. Sarkar M, Fletcher D. How should we measure psychological resilience in sport performers? Measurement in Physical Education and Exercise Science. 2013;17(4):264–280. <https://doi.org/10.1080/1091367X.2013.805141>
34. Saxe K, Hardin R. Psychological safety in athletic team environments. *Journal of Sport Behavior*. 2022;45(2):203–216.
35. Shah EJ, Fransen K, Slater MJ, Barker JB. The impact of intra-team communication and support relationships on team identification and collective efficacy in elite team sport: a social network analysis. *International Journal of Sport and Exercise Psychology*. 2023;20(4):639–659. <https://doi.org/10.1080/1612197X.2022.2084761>
36. Sharma S, Metha S. Psychological safety and creativity in teams: a mediated moderation model of shared leadership and team diversity. *IIM Kozhikode Society & Management Review*. 2025;14(2):135–148. <https://doi.org/10.1177/22779752231163356>
37. Sevindik-Aktaş B. Performans sporunda Zihinsel Antrenman ve alp disiplini kaynağı. In: Ulupınar S, Tozoğlu E, Biricik YS, editors. *Antrenman biliminde Sürdürülebilirlik ve Nitel Araştırmalar*. Ankara: Özgür Yayınları; 2024. <https://doi.org/10.58830/ozgur.pub487.c2024>
38. Sulu B. Psikolojik becerilerin sportif Performansa Etkisinin antrenör gözünden değerlendirilmesi. *Spor Bilimleri Araştırmaları Dergisi*. 2022;7(2):345–57. <https://doi.org/10.25307/jssr.1091142>
39. Yılmaz A. Sporda Zihinsel dayanıklılık. *Uluslararası Dağcılık Ve Tırmanış Dergisi*. 2021;4(2):23–42. <https://doi.org/10.36415/dagcılık.975076>
40. Büyükbasmacı YE. Türkiye'deki spor kulüplerinde psikolojik danışmanlık hizmetlerinin trend analizi (2000–2025). *Spor Ve Bilim Dergisi*. 2025;3(2):221–235.
41. Ersöz G. Dünyada ve Türkiye'de spor Psikolojisinin Tarihsel gelişimi. *Fenerbahçe Üniversitesi Spor Bilimleri Dergisi*. 2022;2(1):20–35.
42. Göktaş ŞŞ, Yiğit LS, Geçer E. Avrupa Birliği ülkelerinde, Amerika'da ve Türkiye'de psikoloji eğitimi ve uygulamaları. *Marmara Üniversitesi Avrupa Araştırmaları Enstitüsü Avrupa Araştırmaları Dergisi*. 2024;32(1):105–131.
43. Ayrancı M, Kaplan A. Spor performansında zihinsel dayanıklılığın rolü: psikolojik faktörlerin etkisini inceleyen bir derleme çalışması. *Ulusal Kinesyoloji Dergisi*. 2024;5(2):19–25.
44. Ryan RM, Deci EL. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*. 2000;55(1):68–78.
45. Bandura A. *Social foundations of thought and action*. Upper Saddle River, NJ: Prentice Hall; 1986.
46. Haggar MS, Chatzisarantis NLD. Intrinsic motivation and self-determination in exercise and sport. Champaign, IL: Human Kinetics; 2007.
47. Weinstein N, DeHaan CR. On the mutuality of human motivation and relationships. In: Weinstein, N, editor. *Human motivation and interpersonal relationships: theory, research, and applications*. Dordrecht: Springer Netherlands; 2014. pp. 3–25.
48. Luszczynska A, Schwarzer R. Social cognitive theory. In: Conner M, Norman, P, editors. *Predicting health behaviour*. McGraw-Hill education; 2015. p. 127–169.
49. Connolly GJ. Applying social cognitive theory in coaching athletes: the power of positive role models. *Strategies*. 2017;30(3):23–29. <https://doi.org/10.1080/08924562.2017.1297750>
50. Baretta D, Greco A, Steca P. Understanding performance in risky sport: the role of self-efficacy beliefs and sensation seeking in competitive freediving. *Personality and Individual Differences*. 2017;117:161–165. <https://doi.org/10.1016/j.paid.2017.06.006>
51. Besharat MA, Pourbohloul S. Moderating effects of self-confidence and sport self-efficacy on the relationship between competitive anxiety and sport performance. *Psychology*. 2011;2(7):760–765. <https://doi.org/10.4236/psych.2011.27116>

52. Gernigon C, Delloye JB. Self-efficacy, causal attribution, and track athletic performance following unexpected success or failure among elite sprinters. *The Sport Psychologist*. 2003;17(1):55–76. <https://doi.org/10.1123/tsp.17.1.55>
53. Wu L, Gao J, Xiang J. The effects of perceived sport environment on sport gains of Chinese university students: chain mediation between physical activity behavior and sport learning self-efficacy. *Frontiers in Psychology*. 2024;15:1466457. <https://doi.org/10.3389/fpsyg.2024.1466457>
54. Rocchi M, Pelletier L, Desmarais P. The validity of the interpersonal behaviors questionnaire (IBQ) in sport. *Measurement in Physical Education and Exercise Science*. 2017;21(1):15–25. <https://doi.org/10.1080/1091367X.2016.1242488>
55. Morbée S, Haerens L, Soenens B, Thys J, Vansteenkiste M. Coaching dynamics in elite volleyball: the role of a need-supportive and need-thwarting coaching style during competitive games. *Psychology of Sport and Exercise*. 2024;73:102655. <https://doi.org/10.1016/j.psychsport.2024.102655>
56. Vella SA, Mayland E, Schweickie MJ, Sutcliffe JT, McEwan D, Swann C. Psychological safety in sport: a systematic review and concept analysis. *International Review of Sport and Exercise Psychology*. 2024;17(1):516–539. <https://doi.org/10.1080/1750984X.2022.2028306>
57. Morales-Sánchez V, Crespo-Jurado M, Jiménez-López D, Morillo-Baro JP, Hernández-Mendo A, Reigal RE. Relationships between controlling interpersonal coaching style, basic psychological need thwarting, and burnout, in adolescent soccer players. *International Journal of Environmental Research and Public Health*. 2020;17(13):4909. <https://doi.org/10.3390/ijerph17134909>
58. Koka A, Tilga H, Pöder T, Kalajas-Tilga H, Hein V, Raudsepp L. The role of perceived coaching behaviours on sport performance among female aesthetic group gymnasts. *Acta Kinesiológiae Universitatis Tartuensis*. 2020;26:16–32. <https://doi.org/10.12697/akut.2020.26.02>
59. Kassim AFM, Boardley ID. Athlete perceptions of coaching effectiveness and athlete-level outcomes in team and individual sports: a cross-cultural investigation. *The Sport Psychologist*. 2018;32(3):189–198. <https://doi.org/10.1123/tsp.2016-0159>
60. Chrétien A, Hayotte M, Vuillemin A, Longueville FDA. Resilience profiles of elite athletes and their associations with health-related behaviors, well-being, and performance: a latent profile analysis. *Psychology of Sport and Exercise*. 2024;74:102689. <https://doi.org/10.1016/j.psychsport.2024.102689>
61. Barczak-Scarboro NE, Kroshus E, Pexa B, Mihalik JKR, DeFreese JD. Athlete resilience trajectories across competitive training: the influence of physical and psychological stress. *Journal of Clinical Sport Psychology*. 2022;18(1):112–130. <https://doi.org/10.1123/jcsp.2021-0111>
62. Li J, Pan X. The impact of mood on sports flow state in football players: a chain mediating model of psychological resilience and achievement motivation in competition. *Frontiers in Psychology*. 2025;16:1523400. <https://doi.org/10.3389/fpsyg.2025.1523400>
63. Yıldız M, Şenel E. Sporda kişiler arası davranışlar ölçeği (SKD) Türkçe formunun geçerlik ve güvenilirlik çalışması. *Gazi Beden Eğitimi Ve Spor Bilimleri Dergisi*. 2018;23(4):219–231.
64. Edmondson A. Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*. 1999;44(2):350–83. <https://doi.org/10.2307/2666999>
65. Yener S. Psikolojik rahatlık ölçeğinin Türkçe formunun geçerlik ve güvenilirlik çalışması. *Ordu Üniversitesi Sosyal Bilimler Enstitüsü Sosyal Bilimler Araştırmaları Dergisi*. 2015;5(13):280–305.
66. Gosai J, Jowett S, Nascimento-Júnior JRAD. When leadership, relationships and psychological safety promote flourishing in sport and life. *Sports Coaching Review*. 2023;12(2):145–165. <https://doi.org/10.1080/21640629.2021.1936960>
67. Schwarzer R, Jerusalem M. Generalized self-efficacy scale. In: Weinman J, Wright S, Johnston M, editors. *Measures in health psychology: a user's portfolio. Causal and control beliefs*. Windsor, UK: NFER-Nelson; 1995. pp. 35–37.
68. Yesilay A, Schwarzer R, Jerusalem M. Turkish adaptation of the general perceived self-efficacy scale. 1996. <http://userpage.fu-berlin.de/~health/turk.htm>
69. Smith BW, Dalen J, Wiggins K, Tooley E, Christopher P, Bernard J. The brief resilience scale: assessing the ability to bounce back. *International Journal of Behavioral Medicine*. 2008;15:194–200. <https://doi.org/10.1080/1070550080222972>
70. Doğan T. Kısa psikolojik sağlamlık ölçeği'nin türkçe uyarlaması: geçerlik ve güvenilirlik çalışması. *The Journal of Happiness & Well-Being*. 2015;3(1):93–102.
71. Bai J, Ng S. Tests for skewness, kurtosis, and normality for time series data. *Journal of Business & Economic Statistics*. 2005;23(1):49–60. <https://doi.org/10.1198/073500104000000271>
72. Hu LT, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*. 1999;6(1):1–55. <https://doi.org/10.1080/10705519909540118>
73. Kline RB. *Principles and practice of structural equation modeling*. New York: Guilford Press; 2023.
74. Browne MW, Cudeck R. Alternative ways of assessing model fit. *Sociological Methods & Research*. 1992;21(2):230–258.
75. Schermelleh-Engel K, Moosbrugger H, Müller H. Evaluating the fit of structural equation models: tests of significance and descriptive goodness-of-fit measures. *Methods Psychological Research Online*. 2003;8(2):23–74.
76. Marsh HW, Hau KT, Wen Z. In search of golden rules: comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling*. 2004;11(3):320–341. https://doi.org/10.1207/s15328007sem1103_2
77. McDonald RP, Marsh HW. Choosing a multivariate model: noncentrality and goodness of fit. *Psychology Bulletin*. 1990;107(2):247–255. <https://doi.org/10.1037/0033-2909.107.2.247>
78. Pope JP, Wilson PM. Understanding motivational processes in university rugby players: a preliminary test of the hierarchical model of intrinsic and extrinsic motivation at the contextual level. *International Journal of Sports Science & Coaching*. 2012;7(1):89–107. <https://doi.org/10.1260/1747-9541.7.1.89>
79. Murillo M, Abós Á, Sevil-Serrano J, Burguero R, García-González L. Influence of coaches' motivating style on motivation, and sport commitment of young water polo players. *International Journal of Sports Science & Coaching*. 2022;17(6):1283–1294. <https://doi.org/10.1177/17479541221116439>
80. Lundqvist C, Schary DP, Eklöf E, Zand S, Jacobsson J. Elite lean athletes at sports high schools face multiple risks for mental health concerns and are in need of psychosocial support. *PLoS One*. 2023;18(4):e0284725. <https://doi.org/10.1371/journal.pone.0284725>
81. Ojio Y, Yamada K, Amemiya R, Kawamura S, Rice SM, Purcell R. Understanding the relationship between sport-related psychological safety and mental toughness in male elite athletes. *Sport Psychiatry*. 2025;4(3):113–120. <https://doi.org/10.1024/2674-0052/a000116>
82. Fletcher D. Psychological resilience and adversarial growth in sport and performance. *Oxford Research Encyclopedias of Psychology*. 2018 Dec 20. Retrieved 07 Mar 2025 from <https://doi.org/10.1093/acrefore/9780190236557.001.0001/acrefore-9780190236557-e-158> <https://oxfordre.com/psychology/view/>
83. Mei Z, Cai C, Wang T, Chifong L, Luo S. Bounce back from adversity: a narrative review and perspective on the formation and consequences of athlete resilience. *Frontiers in psychology*. 2025;16:1599145. <https://doi.org/10.3389/fpsyg.2025.1599145>
84. Kumbur S, Patil B. A study on investigating the levels of mental toughness and resilience among athletes, and how these psychological traits contribute to their performance in competitive sports. *International Journal of Research Publication and Reviews*. 2024;5(4):782–790. <https://doi.org/10.55248/gengpi.5.0424.0914>
85. Isoard-Gautheur S, Trouilloud D, Gustafsson H, Guillet-Descas E. Associations between the perceived quality of the coach–athlete relationship and athlete burnout: an examination of the mediating role of achievement goals. *Psychology of Sport and Exercise*. 2016;22:210–217. <https://doi.org/10.1016/j.psychsport.2015.08.003>
86. Pulido JJ, López-Gajardo MA, Ponce-Bordón JC, Vaquero-Solís M, Leo FM. Does coaches' satisfaction with the team determine their interpersonal style? The mediating role of basic psychological needs. *European Journal of Sport Science*. 2022;22(2):248–256. <https://doi.org/10.1080/17461391.2021.1877358>

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