



Psychological resilience, empathy, and sensitivity to violence against children in coach candidates: An examination of the indirect association

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ABSTRACT

Background: Safe sport requires coaches to recognize and respond appropriately to behaviors that may threaten athletes' well-being, particularly in child and adolescent sport settings. Aim: This study examined the relationships among psychological resilience, empathy, and sensitivity to violence against children in coach candidates, with particular focus on the statistical mediating role of empathy. **Methods:** A cross-sectional correlational design was employed with 183 undergraduate students enrolled in Coaching Education. Data were collected using the Brief Resilience Scale, Empathy Assessment Scale, Sensitivity to Violence Against Children Scale, and a demographic information form. Independent-samples t tests, one-way ANOVA, and Hayes' PROCESS Model 4 were used. **Results:** Empathy was positively associated with sensitivity to violence against children ($B = 0.328$, $p < .001$). Psychological resilience did not significantly predict empathy ($p = .055$) or sensitivity to violence directly ($p = .147$). However, the indirect effect of psychological resilience on sensitivity to violence through empathy was significant ($B = -0.077$, 95% CI $[-0.156, -0.008]$, $p = .015$). **Conclusion:** Empathy showed a significant statistical indirect association in the relationship between psychological resilience and sensitivity to violence against children. Given the cross-sectional design, this finding should not be interpreted as evidence of causal mediation or a temporal mechanism. These findings highlight the potential relevance of empathy and safe-sport education in coach education. However, longitudinal and intervention-based studies are needed to determine whether such approaches influence sensitivity to violence.

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INTRODUCTION

Sport environments are multidimensional settings that support not only athletes' physical development but also their psychological, social, emotional, and moral development. Within these environments, coaches hold considerable power and authority through responsibilities such as implementing training programs, evaluating performance, maintaining team dynamics, and supporting athletes' motivation. This position enables coaches to contribute to safe and positive sporting environments; however, power imbalances within coach-athlete relationships may also

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create conditions in which harmful practices, bullying, pressure, and maltreatment can occur. Accordingly, contemporary approaches to safe sport emphasize the protection of athletes from not only physical harm but also psychological violence, neglect, and abuse (Mountjoy et al., 2016; Tuakli-Wosornu et al., 2024).

Interpersonal violence in sport includes behaviors that may adversely affect athletes' health, safety, and well-being. The International Olympic Committee identifies psychological, physical, and sexual violence, as well as neglect, among the major forms of non-accidental violence that may occur in sport settings (Mountjoy et al., 2016). Evidence from athlete populations indicates that such experiences are not uncommon. For example, among adults who had participated in sports during childhood in Belgium and the Netherlands, 11% reported experiences of physical violence, 38% psychological violence, and 14% sexual violence (Vertommen et al., 2016). Although these findings cannot be generalized across countries, they demonstrate the importance of addressing athlete safety systematically. A systematic review of organizational determinants of physical violence in sport further identified power imbalances, unconditional obedience to authority, prioritization of success, and beliefs that harmful practices are necessary for performance as important risk factors (Roberts et al., 2019).

The coach–athlete relationship is particularly relevant to safe sport because athletes may depend on coaches for team selection, competition participation, performance evaluation, and other sport-related opportunities. This dependence may make athletes less likely to question inappropriate behaviors or report experiences of violence and maltreatment. Research conducted with university athletes has also shown that perceived coaching style is associated with experiences of interpersonal violence, with supportive coaching approaches associated with more favorable athlete experiences and abusive coaching approaches associated with greater exposure to violence (Zogg et al., 2024). These findings, however, are derived from athletes' experiences and therefore should not be directly equated with the perceptions or characteristics of coaches or prospective coaches.

From the perspective of prevention, therefore, it is important to consider not only athletes' experiences but also the psychological characteristics of individuals who are preparing to become coaches. Sensitivity to violence against children refers to an individual's awareness of potentially harmful behaviors and their ability to recognize, evaluate, and respond appropriately to violence and maltreatment. Educational interventions aimed at improving the recognition of harmful behaviors and appropriate intervention strategies may contribute to violence prevention in sport (Adriaens et al., 2024). Examining sensitivity to violence among coaching candidates may consequently provide useful information for coach education, particularly because these individuals are developing the professional knowledge, attitudes, and interpersonal skills that may shape their future interactions with athletes.

One psychological characteristic that may be relevant to this process is psychological resilience. Psychological resilience refers to an adaptive capacity that enables individuals to maintain or regain psychological adjustment when confronted with significant stress or adversity (Bryan et al., 2019). In coaching contexts, resilience may be relevant to managing performance expectations, competition-related pressure, relationships with athletes and their families, failure, uncertainty, and other demanding situations. However, resilience primarily concerns adaptation and functioning in the face of adversity and should not, by itself, be assumed to result in ethical or athlete-centered behavior. The way individuals respond to challenging situations may also depend on interpersonal and emotional characteristics that shape how they perceive and respond to others.

Empathy may represent one such interpersonal characteristic. Empathy is a multidimensional construct involving the ability to understand another person's emotions and perspective and to respond appropriately to their experiences. In coaching, empathy may facilitate recognition of athletes' emotional states and help coaches consider how their behaviors may affect athletes. Empathic responses may therefore be particularly relevant when coaches or prospective coaches encounter situations involving fear, anxiety, shame, pressure, or helplessness. Research in athlete populations has indicated that some dimensions of empathy, particularly perspective taking, are associated with lower levels of aggression and hostility. However, the relationship is not uniform across all dimensions of empathy (Mahmoudi et al., 2022). Similarly, meta-analytic evidence has generally linked empathy with prosocial behavior and concern for others (Ding & Lu, 2016; Yin &

Wang, 2023), while research among university students has reported a positive association between empathy and prosocial behavior (Peng et al., 2024).

Evidence from active coaches provides a different perspective. Schwab et al. (2026), examining 145 coaches, reported difficulties in recognizing some forms of interpersonal violence and neglect, particularly less visible forms of violence, and emphasized the importance of training aimed at improving coaches' recognition of and responses to violence. Thus, findings from active coaches suggest that professional experience alone may not ensure accurate recognition of harmful behaviors. In contrast, the present study focuses on coaching candidates who are still in undergraduate education. This distinction is important because coaching candidates have not yet necessarily acquired the professional experiences, responsibilities, and organizational roles of active coaches.

Taken together, the available literature suggests that psychological resilience, empathy, and sensitivity to violence may be related, but the nature of these relationships remains insufficiently clear among prospective coaches. Psychological resilience may support adaptive responses to challenging situations, whereas empathy may provide an interpersonal mechanism through which individuals consider the experiences and potential harm experienced by others. Accordingly, empathy may be particularly relevant to understanding why psychological resilience may be associated with sensitivity to violence in some contexts. However, existing evidence involving athletes, active coaches, and coaching candidates should not be treated as directly equivalent because these groups occupy different positions within the sport environment.

Therefore, the present study focuses specifically on undergraduate coaching candidates and examines the relationship between psychological resilience and sensitivity to violence against children, with empathy considered as a potential mediating variable. The proposed theoretical model assumes that psychological resilience may be associated with empathy, while empathy may, in turn, be associated with greater sensitivity to violence against athletes. The study therefore aimed to examine the relationships among psychological resilience, empathy, and sensitivity to violence against children among coaching candidates and to test the statistical indirect effect of psychological resilience on sensitivity to violence through empathy.

Proposed Research Hypotheses:

This description requires a research hypothesis. The research hypothesis for this study is H₁: Coaching candidates' levels of psychological resilience are significantly associated with their sensitivity to violence against athletes; H₂: Coaching candidates' levels of psychological resilience are positively associated with their levels of empathy; H₃: Coaching candidates' levels of empathy are positively associated with their sensitivity to violence against athlete; H₄: Empathy significantly mediates the statistical association between psychological resilience and sensitivity to violence against children.

METHOD

Research Design

This study was conducted using a quantitative research approach and a correlational survey design to examine the relationships among psychological resilience, empathy, and sensitivity to violence against athletes in coaching candidates. The study employed a cross-sectional and non-interventional design. In the theoretical model of the study, psychological resilience was considered the independent variable, sensitivity to violence against athletes was considered the dependent variable, and empathy was considered the mediating variable. The direct relationships among the variables and the statistical mediating role of empathy were examined through mediation analysis without making causal inferences. Due to the cross-sectional and non-interventional nature of the study, the mediation analysis should not be interpreted as evidence of causal mediation or temporal ordering among the variables. The findings reflect the direct and indirect statistical associations between psychological resilience, empathy, and sensitivity to athlete-directed violence, all of which were measured at a single point in time. Accordingly, the mediation analysis was employed to assess whether the indirect component of the relationship between psychological resilience and sensitivity to athlete-directed violence, explained through empathy, was consistent with the proposed theoretical model.

Participants

The sample of the study consisted of 183 undergraduate students who were enrolled in the Department of Coaching Education at the Faculty of Sports Sciences during the 2025–2026 academic year and voluntarily agreed to participate in the study. The research group was formed using convenience sampling among students who met the predetermined inclusion criteria. The inclusion criteria for the study were being enrolled as a student in the Department of Coaching Education at the Faculty of Sports Sciences, being actively enrolled and attending the program during the period in which the study was conducted, and voluntarily agreeing to participate in the study. The exclusion criteria were not being enrolled in the Department of Coaching Education, having suspended enrollment or not being actively enrolled in the program, declining to participate voluntarily in the study, and completing the data collection instruments incompletely or incorrectly.

Population and Sampling

The primary reason for choosing convenience sampling in this study was that this method enabled access to the prospective coaches constituting the target population within the predetermined data collection period. The use of probability sampling methods was not feasible due to limitations related to time, accessibility, and institutional procedures. Although convenience sampling enhanced the feasibility of the study, the fact that the sample consisted of students enrolled in a specific faculty and department may limit the generalizability of the findings to all prospective coaches. Therefore, the findings should be interpreted with consideration of the characteristics of the sample and the limitations associated with the sampling method.

Instrument

Demographic Information Form: Participants' age, gender, and year of study were collected using a demographic information form developed by the researchers. **Empathy Assessment Scale:** The Empathy Assessment Scale was developed by Malakçioğlu (2022) to assess individuals' levels of understanding others' emotions and thoughts, identifying these emotions, and responding appropriately to others. The scale consists of three subdimensions and a total of 13 items: Social Interaction (4 items), Cognitive Behavior (5 items), and Emotional Identification (4 items). The scale uses a five-point Likert-type format, with participants rating each statement on a scale ranging from 1=Strongly Disagree to 5=Strongly Agree. Higher total scores obtained from the scale indicate higher levels of empathy. In the scale development study, the Cronbach's alpha internal consistency coefficient for the total score was 0.845. The reliability coefficients for the subdimensions were reported as 0.696 for Social Interaction, 0.802 for Cognitive Behavior, and 0.964 for Emotional Identification. Based on these findings, the Empathy Assessment Scale was reported to be a sufficiently valid and reliable measurement instrument for assessing individuals' levels of empathy (Malakçioğlu, 2022). In the current sample, internal consistency coefficients (Cronbach's α) were .674 for Social Interaction, .796 for Cognitive Behavior, .914 for Emotional Identification, and .816 for the overall scale.

Sensitivity to Violence Against Children Scale (SVACS): The Sensitivity to Violence Against Children Scale was developed by Özyürek (2017) to assess individuals' levels of awareness of and sensitivity to behaviors involving physical, psychological, and emotional violence against children. The scale has a unidimensional structure and consists of a total of 19 items. Participants indicate their responses to the scale items using a three-point Likert-type rating format consisting of "Disagree," "Undecided," and "Agree." Higher total scores obtained from the scale indicate higher levels of sensitivity to violence against children. Reverse-coded items are reverse-scored during the scoring process and included in the total score. In the scale development study, validity and reliability analyses yielded a Cronbach's alpha coefficient of 0.82, indicating that the scale is a reliable measurement instrument for assessing sensitivity to violence against children (Özyürek, 2017). The Cronbach's alpha internal consistency coefficient calculated for this sample was .796.

Brief Resilience Scale (BRS): The Brief Resilience Scale was developed by Smith et al. (2008) to assess individuals' capacity to recover, adapt, and cope with difficulties in the face of stress and adversity. The Turkish adaptation, validity, and reliability study of the scale was conducted by Doğan (2015). The scale has a unidimensional structure consisting of six items and is used to assess individuals' levels of psychological resilience. The scale is rated using a five-point Likert-type format,

with participants indicating their level of agreement with each statement on a scale ranging from 1=Strongly Disagree to 5=Strongly Agree. Reverse-coded items are scored accordingly during the scoring process. Higher total scores obtained from the scale indicate higher levels of psychological resilience. In the Turkish adaptation study conducted by Doğan (2015), the scale demonstrated a Cronbach's alpha internal consistency coefficient of 0.83, indicating that it is a reliable measurement instrument. The Cronbach's alpha internal consistency coefficient calculated for this sample was .789

Procedures and Time Frame

This study was conducted using a questionnaire-based research design, and anonymous and confidential data were collected from 183 students enrolled in the Department of Coaching Education who voluntarily agreed to participate in the study. All stages of the research were conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Ethical approval for the study was obtained from the Ethics Committee for Social and Human Sciences Research at Istanbul University-Cerrahpaşa. The research application was reviewed at the committee meeting held on April 7, 2026, and was unanimously deemed ethically appropriate (Meeting Decision No. 2026/267). The data collection process was initiated following the receipt of ethical approval and the necessary permissions for the use of the measurement instruments employed in the study. The study group consisted of 183 students enrolled in the Department of Coaching Education who voluntarily agreed to participate in the research. Participants were informed about the purpose and scope of the study and the data collection process, and it was explained that participation was entirely voluntary.

Participants were informed that declining to participate or withdrawing from the study at any stage, without providing any reason, would not result in any adverse consequences for them. It was also explicitly stated that no personal information that could reveal their identities would be collected, that the data obtained would be used solely for scientific purposes, would not be shared with any individual or institution other than the researchers, and would be stored in accordance with the principles of confidentiality. The data collection instruments were administered to all participants under similar conditions. Participants were asked to complete, in sequence, the personal information form and the measurement instruments assessing psychological resilience, empathy, and sensitivity to athlete-directed violence. During the administration, participants were not given any guidance or direction and were instructed to respond to the items individually and honestly. The data obtained were analyzed statistically solely for the study.

Analysis Plan

The data obtained from the study were analyzed using SPSS version 25.0. Descriptive statistics, including frequency distributions, means, and standard deviations, were calculated for the participants' demographic characteristics. As there were no missing data for the variables used in the analyses, no missing data imputation method was applied. The normality distributions of the scales were examined via skewness and kurtosis; since the values fell within the range of -1.5 to +1.5 (Tabachnick & Fidell, 2019), parametric tests were employed for hypothesis testing. For comparisons between two groups regarding scale scores, the independent-samples t test was used. In contrast, one-way analysis of variance (ANOVA) was employed for comparisons involving more than two groups. When the ANOVA results indicated a statistically significant difference, the Tukey HSD post hoc test was used to determine the source of the difference.

To test the mediation model proposed as the primary model of the study, Model 4 of the PROCESS macro for SPSS (Hayes, 2022) with 5,000 bootstrap samples and 95% confidence intervals was employed. For all other analyses 95% confidence interval was used with the significance level set at $p=.05$. A priori power analysis was conducted using G*Power 3.1.10 based on a regression analysis examining the explanatory power of the model comprising the mediator and independent variable in predicting the dependent variable. The analysis was conducted assuming a medium effect size ($f^2=0.15$), an alpha error probability of 0.05, and a statistical power of $1 - \beta=0.95$. Based on these parameters, the required sample size was calculated as 183 participants. The post hoc power analysis yielded a critical F value of 3.046 and a statistical power of 0.998, indicating that the sample size provided high and adequate statistical power for detecting the relationships specified in the regression model.

Scope and Methodological Limitations

The study was cross-sectional and non-interventional; therefore, the mediation analysis represents direct and indirect statistical associations measured at a single point in time and should not be interpreted as evidence of causal mediation or temporal ordering. Convenience sampling was used, and the sample was restricted to students from one Department of Coaching Education. These features limit the generalizability of the findings beyond the study group.

RESULTS AND DISCUSSION

Results

The descriptive characteristics of the 183 participants were analyzed based on their year of study and gender. The frequency and percentage distributions of these characteristics are presented in Table 1.

Table 1. Frequency Distribution of Descriptive Characteristics

Variable	Category	n	%
Year of study	1	50	27.3
	2	63	34.4
	3	27	14.8
	4	43	23.5
Gender	Female	74	40.4
	Male	109	59.6

When the frequency and percentage distributions of the descriptive characteristics of the participants were examined, second-year students constituted the largest proportion of the sample (34.4%; n=63), followed by first-year students (27.3%; n=50), fourth-year students (23.5%; n=43), and third-year students (14.8%; n=27), respectively. In addition, 59.6% (n=109) of the participants were male, while 40.4% (n=74) were female. The study group consisted of a total of 183 participants.

Table 2. Descriptive Statistics

Variable	Min	Max	M	SD
Age	18.00	57.00	21.442	4.404
Empathy-Social Interaction	4.00	20.00	13.710	2.595
Empathy-Cognitive Behavior	5.00	25.00	19.879	3.037
Empathy-Emotional Identification	4.00	20.00	12.972	2.728
Empathy-Total	13.00	63.00	46.562	6.832
Sensitivity to Violence Against Children	29.00	57.00	46.125	6.216
Brief Resilience Scale	6.00	30.00	18.841	4.124

When the descriptive statistics of the participants' ages and their scores on the scales and subdimensions used in the study were examined, participants' ages were found to range from 18.00 to 57.00 years, with a mean age of 21.442 (SD=4.404). Regarding the subdimensions of the Empathy Assessment Scale, scores on the Social Interaction subdimension ranged from 4.00 to 20.00, with a mean score of 13.710 (SD=2.595); scores on the Cognitive Behavior subdimension ranged from 5.00 to 25.00, with a mean score of 19.879 (SD=3.037); and scores on the Emotional Identification subdimension ranged from 4.00 to 20.00, with a mean score of 12.972 (SD=2.728). The total score on the Empathy Assessment Scale ranged from 13.00 to 63.00, with a mean total score of 46.562 (SD=6.832). Regarding the other measurement instruments used in the study, scores on the Sensitivity to Violence Against Children Scale ranged from 29.00 to 57.00, with a mean score of 46.125 (SD=6.216). Scores on the Brief Resilience Scale ranged from 6.00 to 30.00, with a mean score of 18.841 (SD=4.124).

Table 3. Comparison of Scale Scores by Gender

Measure	Gender	n	M	SD	t	Cohen's d	p
Empathy-Social Interaction	Female	74	15.108	2.205	6.685	1.007	< .001
	Male	109	12.761	2.411			
Empathy-Cognitive Behavior	Female	74	20.729	2.259	3.197	0.482	.002
	Male	109	19.302	3.356			
Empathy-Emotional Identification	Female	74	14.013	2.830	4.468	0.673	< .001
	Male	109	12.266	2.425			
Empathy-Total	Female	74	49.851	6.096	5.831	0.878	< .001
	Male	109	44.330	6.411			
Sensitivity to Violence Against Children	Female	74	46.905	5.961	1.402	-	.163
	Male	109	45.596	6.356			
Brief Resilience Scale	Female	74	18.243	3.704	-1.624	-	.106
	Male	109	19.247	4.357			

An independent-samples t test was conducted to determine whether scale and subdimension scores differed according to participants' gender. The analyses showed that female participants had a significantly higher mean score on the Social Interaction subdimension of the Empathy Assessment Scale ($M=15.108$, $SD=2.205$) than male participants ($M=12.761$, $SD=2.411$) ($t=6.685$, $p<.001$, $d=1.007$). For the Cognitive Behavior subdimension, female participants also had a significantly higher mean score ($M=20.729$, $SD=2.259$) than male participants ($M=19.302$, $SD=3.356$) ($t=3.197$, $p=.002$, $d=0.482$). Similarly, female participants had a significantly higher mean score on the Emotional Identification subdimension ($M=14.013$, $SD=2.830$) than male participants ($M=12.266$, $SD=2.425$) ($t=4.468$, $p<.001$, $d=0.673$). Regarding the total score of the Empathy Assessment Scale, female participants had a significantly higher overall empathy score ($M=49.851$, $SD=6.096$) compared with male participants ($M=44.330$, $SD=6.411$) ($t=5.831$, $p<.001$, $d=0.878$). No statistically significant gender differences were found in scores on the Sensitivity to Violence Against Children Scale or the Brief Resilience Scale ($p>.05$).

A one-way analysis of variance (ANOVA) was conducted to determine whether scale and subdimension scores differed according to participants' year of study (Table 4). For analyses yielding statistically significant results, the Tukey HSD test was used as a post hoc test.

A statistically significant difference was found in the Social Interaction subdimension scores of the Empathy Assessment Scale according to year of study ($F=2.788$, $p=.042$, partial $\eta^2=0.045$). The Tukey HSD multiple comparison test conducted to determine the source of the difference showed that third-year students had a significantly higher mean score ($M=14.703$, $SD=1.654$) than both first-year students ($M=13.240$, $SD=2.403$) and second-year students ($M=13.349$, $SD=2.829$).

A statistically significant difference was also found in the Emotional Identification subdimension scores according to year of study ($F=5.316$, $p=.002$, partial $\eta^2=0.082$). According to the Tukey HSD test results, third-year students had a significantly higher mean score ($M=14.333$, $SD=2.731$) than both first-year students ($M=12.160$, $SD=2.350$) and second-year students ($M=12.587$, $SD=2.965$). Similarly, fourth-year students had a significantly higher mean score ($M=13.627$, $SD=2.360$) than first-year and second-year students.

Regarding the total scores on the Empathy Assessment Scale, the difference between the groups was statistically significant ($F=3.233$, $p=.024$, partial $\eta^2=0.051$). The Tukey HSD test results indicated that third-year students had a significantly higher mean overall empathy score ($M=49.148$, $SD=4.443$) than first-year students ($M=45.180$, $SD=5.232$) and second-year students ($M=45.539$, $SD=7.908$). In addition, fourth-year students had a significantly higher mean score ($M=48.046$, $SD=7.444$) than first-year students.

No statistically significant differences according to year of study were found in the Cognitive Behavior subdimension of the Empathy Assessment Scale ($p>.05$), the Sensitivity to Violence Against Children Scale ($p>.05$), or the Brief Resilience Scale ($p>.05$).

Table 4. Comparison of Scale Scores by Year of Study

Measure	Year	n	M	SD	F	p	partial η^2	Post hoc
Empathy-Social Interaction	1	50	13.240	2.403	2.788	.042	0.045	3>1; 3>2
	2	63	13.349	2.829				
	3	27	14.703	1.654				
	4	43	14.162	2.759				
Empathy-Cognitive Behavior	1	50	19.780	2.112	.460	.711	-	-
	2	63	19.603	3.604				
	3	27	20.111	1.694				
	4	43	20.255	3.678				
Empathy-Emotional Identification	1	50	12.160	2.350	5.316	.002	0.082	3>1; 3>2; 4>1; 4>2
	2	63	12.587	2.965				
	3	27	14.333	2.731				
	4	43	13.627	2.360				
Empathy-Total	1	50	45.180	5.232	3.233	.024	0.051	3>1; 3>2; 4>1
	2	63	45.539	7.908				
	3	27	49.148	4.443				
	4	43	48.046	7.444				
Sensitivity to Violence Against Children	1	50	44.920	6.605	.908	.438	-	-
	2	63	46.619	6.583				
	3	27	46.888	4.660				
	4	43	46.325	6.054				
Brief Resilience Scale	1	50	18.620	3.937	.815	.487	-	-
	2	63	19.301	4.368				
	3	27	17.888	4.353				
	4	43	19.023	3.838				

Note. M=mean; SD=standard deviation. The Tukey HSD test was used to identify the source of statistically significant between-year differences.

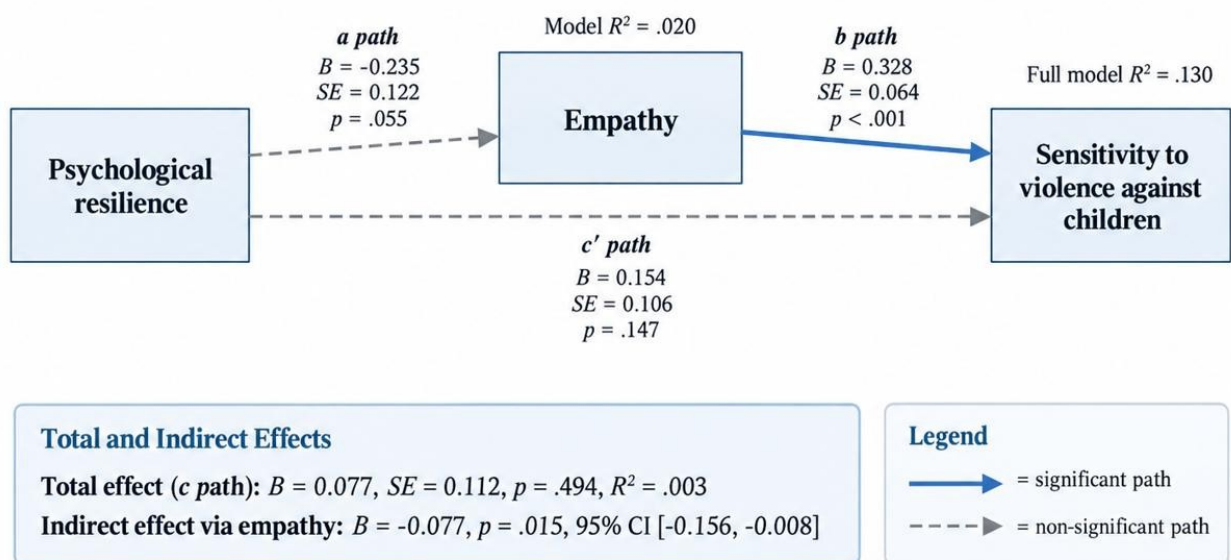
**Figure 1.** Mediation Model of Empathy in the Relationship Between Psychological Resilience and Sensitivity to Violence Against Children in Coach Candidates

Table 5. Mediation Model for Psychological Resilience, Empathy, and Sensitivity to Violence

Effect / Path	B	SE	p	Model / CI
a path: Psychological resilience → Empathy	0.235	0.122	.055	R ² =.020
b path: Empathy → Sensitivity to violence	0.328	0.064	< .001	
c path: Psychological resilience → Sensitivity to violence	0.077	0.112	.494	R ² =.003
c' path: Psychological resilience → Sensitivity to violence (with empathy)	0.154	0.106	.147	R ² =.130
Indirect effect via empathy	-0.077	-	.015	95% CI [-0.156, -0.008]

Note. B=unstandardized regression coefficient; SE=standard error; CI=confidence interval. The indirect effect was evaluated using 5,000 bootstrap samples. The source manuscript reports PROCESS Model 4 for the mediation model and AMOS version 24 for the bootstrap significance test.

Based on the hypothesized model of the study, Hayes' (2022) PROCESS macro Model 4 was used in SPSS version 25.0 to examine the mediating role of empathy in the effect of psychological resilience on sensitivity to violence against athletes. According to the analysis results, the direct effect of psychological resilience on the mediator variable, empathy (a path), was not statistically significant ($B=-0.235$, $SE=0.122$, $p=.055$). In contrast, the effect of empathy on sensitivity to violence against athletes (b path) was positive and statistically significant ($B=0.328$, $SE=0.064$, $p<.001$).

When the mediator variable, empathy, was not included in the model, the total effect of psychological resilience on sensitivity to violence (c path) was not statistically significant ($B=0.077$, $SE=0.112$, $p=.494$, $R^2=0.003$). When empathy was included in the model as a mediator, the direct effect of psychological resilience on sensitivity to violence (c' path) remained statistically nonsignificant ($B=0.154$, $SE=0.106$, $p=.147$). The model including both the independent and mediator variables explained 13% of the variance in sensitivity to violence ($R^2=0.130$, $p<.001$).

To assess the significance of the mediation effect, the results of a bootstrap analysis based on 5,000 resamples were examined using AMOS version 24. The analysis showed that the indirect effect of psychological resilience on sensitivity to violence against athletes was statistically significant ($B=-0.077$, 95% CI [-0.156, -0.008], $p=.015$). The fact that the bootstrap confidence interval did not include zero indicates that empathy plays an indirect mediating role in the relationship between psychological resilience and sensitivity to violence, suggesting a significant indirect effect.

Discussion

The present study examined the relationships among psychological resilience, empathy, and sensitivity to violence against child athletes among prospective coaches enrolled in undergraduate coach education. A further objective was to examine whether empathy statistically accounted for part of the association between psychological resilience and sensitivity to violence. Several findings emerged from the analyses. Most notably, the indirect effect of psychological resilience on sensitivity to violence through empathy was statistically significant. However, the pathway from psychological resilience to empathy was negative and did not reach statistical significance. In addition, neither the total effect of psychological resilience on sensitivity to violence nor its direct effect after controlling for empathy was statistically significant. Thus, the findings do not provide straightforward support for the initially proposed theoretical model. Rather, the combination of a nonsignificant resilience–empathy association and a statistically significant indirect effect represents a pattern that warrants cautious interpretation.

One possible interpretation of this pattern is that the indirect association may reflect an inconsistent indirect effect or a suppression-type pattern rather than a conventional mediation process in which psychological resilience is expected to facilitate empathy. Because the resilience–empathy association was negative but nonsignificant, the significant indirect effect should not be interpreted as evidence that higher psychological resilience necessarily leads to greater empathy or, in turn, greater sensitivity to violence. Instead, the findings indicate that the statistical association among these variables may be more complex than initially hypothesized. The direction of the indirect effect may partly reflect the combination of the signs and magnitudes of the component paths rather than a clearly established theoretical sequence. Therefore, the present findings should be regarded

as an indication of a statistically significant indirect association that requires further investigation and replication, rather than as evidence of a causal mechanism.

The positive and significant association between empathy and sensitivity to violence ($B=0.328$, $p<.001$) nevertheless provides an important descriptive finding in relation to athlete safety. This result suggests that prospective coaches who report greater empathy also tend to report greater sensitivity to violence against child athletes. This association is broadly compatible with previous research examining empathy in relation to aggressive and harmful behaviors. For example, Mahmoudi et al. (2022), in a study of 492 athletes, reported that perspective taking was negatively associated with proactive and reactive aggression, as well as physical and verbal aggression, anger, and hostility. However, their findings also demonstrated that the relationship between empathy and aggression varies across dimensions of empathy, with personal distress showing a different pattern from perspective taking. Accordingly, the present finding should not be interpreted as evidence that empathy is uniformly protective against harmful behavior. Rather, it highlights the importance of considering the multidimensional nature of empathy, particularly the capacity to understand and evaluate another person's perspective. From an educational perspective, this may be relevant to coach preparation because prospective coaches may benefit from opportunities to develop perspective-taking and to consider athletes' experiences when evaluating potentially harmful situations (Mahmoudi et al., 2022).

This interpretation is also compatible with research concerning coach–athlete relationships. Duhaylungsod et al. (2024) emphasized trust, open communication, emotional closeness, and empathy as relational qualities associated with athlete well-being and lower burnout. Such findings suggest that interpersonal qualities within the coach–athlete relationship may be relevant to athletes' psychosocial experiences. However, given the cross-sectional and correlational nature of the present study, the observed association between empathy and sensitivity to violence should not be interpreted as evidence that increasing empathy would necessarily produce greater sensitivity to violence.

The sport-specific literature further demonstrates the relevance of coaches' interpersonal behaviors to athlete safety. In a study involving 4,119 university athletes, Zogg et al. (2024) reported that approximately one in ten participants had experienced interpersonal violence during their athletic careers. The study also identified associations between perceptions of coaching style and experiences of violence, with supportive and abusive coaching approaches showing different patterns of association with athletes' experiences. These findings underline the relevance of the coaching environment when considering athlete safety (Zogg et al., 2024). Similarly, research on team climate has indicated associations between controlling coach behaviors and athlete burnout and has emphasized athlete-centered approaches within supportive sport environments (Tuano et al., 2025). Recent research has also reported associations between coaches' positive and negative behaviors and athletes' psychosocial outcomes, including self-efficacy (Ozturk et al., 2026). Taken together, this literature provides contextual support for examining interpersonal characteristics such as empathy alongside psychological resources when studying safe-sport attitudes and behaviors. In contrast, the present study itself does not establish causal relationships among these variables.

An important finding that requires particular consideration is the negative, although statistically nonsignificant, association between psychological resilience and empathy. This result did not support the expectation that greater psychological resilience would be positively associated with empathy. The finding therefore challenges a simple assumption that psychological resilience necessarily corresponds to greater interpersonal sensitivity. Díaz-Narváez et al. (2025), in a study involving 993 health sciences students, similarly reported that the relationship between resilience and empathy was not uniformly positive across their analyses. Such evidence suggests that resilience and empathy may represent conceptually distinct psychological characteristics and that the capacity to cope effectively with adversity does not necessarily translate into greater sensitivity to the experiences of others.

The present pattern may also be understood in relation to the contextual nature of resilience. Psychological resilience generally refers to the capacity to adapt to adversity and maintain functioning under challenging circumstances. However, the behavioral expression of resilience may depend on the social and cultural context in which coping occurs. Within highly competitive sporting

environments, characteristics associated with persistence, emotional control, endurance, and tolerance of pressure may coexist with norms that normalize harsh treatment or minimize certain harmful experiences. Consequently, a coach who reports relatively high resilience may not necessarily demonstrate greater sensitivity to interpersonal harm. This interpretation remains tentative and cannot be established from the present cross-sectional data.

The findings of Schwab et al. (2026) provide relevant contextual evidence. In their study of 145 coaches, approximately 30% of forms of violence and neglect were reportedly not correctly recognized, with particular difficulties in identifying less visible forms of violence. Coaches who did not accurately recognize violent situations also tended to perceive such incidents as less serious. The authors emphasized the importance of education aimed at improving coaches' recognition of violence and appropriate responses (Schwab et al., 2026). In this context, the positive association observed between empathy and sensitivity to violence in the present study may indicate that interpersonal awareness is relevant to how prospective coaches perceive potentially harmful situations. However, this finding should not be interpreted to mean that empathy alone is sufficient to prevent violence or determine appropriate intervention. Rather, empathy may represent one of several individual and contextual characteristics that warrant attention within coach education. Recent Turkish research similarly indicates that coaches identify psychological abuse as an important safeguarding concern and report a need for clearer definitions, reporting procedures, and standardized safeguarding education (Öztürk et al., 2026).

Regarding gender, female prospective coaches reported significantly higher total empathy scores and higher scores on the Social Interaction, Cognitive Behavior, and Emotional Identification subdimensions than male prospective coaches. In contrast, no significant gender differences were observed in psychological resilience or sensitivity to violence. These findings indicate that gender differences in empathy were present in the current sample, whereas sensitivity to violence was not significantly differentiated by gender. Accordingly, differences in empathy should not be assumed to translate directly into differences in sensitivity to violence. From a coach-education perspective, these findings may support the inclusion of empathy, ethical decision-making, boundary awareness, and safeguarding content across the curriculum for all prospective coaches rather than assuming that such competencies are sufficiently developed on the basis of gender. A recent study among university students in a sport-related context similarly reported higher cognitive empathy and total empathy scores among female participants. However, differences in sample characteristics and measurement instruments should be considered when comparing these findings (Namazci, 2026).

The findings concerning year of study are also noteworthy. Third-year students reported significantly higher total empathy, Social Interaction, and Emotional Identification scores than first- and second-year students, while fourth-year students reported higher total empathy scores than first-year students. In contrast, psychological resilience and sensitivity to violence did not differ significantly according to year of study. These findings suggest that differences in empathy across years of education do not necessarily correspond to differences in psychological resilience or sensitivity to violence. Therefore, the duration of undergraduate education alone may not be sufficient to explain variation in safeguarding-related characteristics. Instead, the incorporation of explicit content concerning safe sport, child safeguarding, ethical conduct, boundary violations, and recognition of interpersonal violence throughout coach education may warrant consideration. This educational perspective is consistent with research emphasizing the role of physical educators in supporting social, emotional, and moral development (Pennington, 2025).

Implications

The findings may have implications for coach education, particularly regarding the joint consideration of psychological resilience and empathy. Educational programs could include perspective taking, ethical decision-making, child safeguarding, boundary awareness, recognition of interpersonal violence, and bystander intervention. Such content may provide prospective coaches with opportunities to consider athletes' experiences and to become more familiar with behaviors that may constitute safeguarding concerns. However, because the present study was cross-sectional and correlational, these educational suggestions should be regarded as practice-oriented considerations rather than interventions demonstrated by this study to cause improvements in safeguarding outcomes. Recent sport-specific research has also emphasized the multidimensional

nature of emotional competencies in sport (Suherman et al., 2025), while Turkish safeguarding research has highlighted the relevance of structured education, clear reporting pathways, and standardized safe-sport practices (Öztürk et al., 2026).

Research Contribution

The present study contributes to the literature by examining psychological resilience, empathy, and sensitivity to violence against child athletes within a single statistical model among prospective coaches. The statistically significant indirect effect, despite the nonsignificant negative association between psychological resilience and empathy and the nonsignificant total and direct effects of psychological resilience on sensitivity to violence, represents a complex statistical pattern that has not been fully captured by the initial theoretical expectations. Rather than providing evidence for a conventional mediation process, these findings raise the possibility of an inconsistent indirect effect or suppression-type pattern. This pattern provides a basis for further research examining how resilience, empathy, and safeguarding-related attitudes are associated across different coaching populations and contexts.

Limitations

Several limitations should be considered when interpreting the findings. First, the cross-sectional design does not permit causal conclusions regarding the relationships among psychological resilience, empathy, and sensitivity to violence. Second, the use of convenience sampling limits the generalizability of the findings beyond the sampled population. Third, participants were recruited from a single Department of Coaching Education, which may limit the extent to which the findings represent prospective coaches from other universities, sports disciplines, or educational contexts. Fourth, all focal variables were assessed at a single point in time using self-report measures, which may introduce common-method and self-report biases. Finally, the Sensitivity to Violence Against Children Scale specifically assesses sensitivity to violence against children; therefore, the findings should primarily be interpreted within the context of prospective coaches who may work with child and adolescent athletes.

Suggestions

Future studies should replicate these findings using larger and more diverse samples involving prospective coaches from multiple universities, different sport disciplines, and actively practicing coaches. Longitudinal research could help clarify whether changes in psychological resilience, empathy, and safeguarding-related attitudes are associated over time. Experimental or intervention-based studies may also examine whether specific coach-education components are associated with changes in empathy, violence recognition, or safeguarding knowledge. In addition, future research should investigate potential explanatory conditions for the negative but nonsignificant resilience–empathy association and the significant indirect effect. Variables such as ethical climate, beliefs that legitimize violence, perceived norms within sport environments, stress, emotional regulation, and previous safe-sport education may help clarify the circumstances under which resilience and empathy are associated with sensitivity to violence.

CONCLUSION

In conclusion, the present study identified a statistically significant positive association between empathy and sensitivity to violence against child athletes among prospective coaches. At the same time, psychological resilience was not significantly associated directly with empathy or sensitivity to violence. Although the indirect effect involving empathy was statistically significant, the negative and nonsignificant resilience–empathy association indicates that this finding does not conform to a conventional mediation pattern in which psychological resilience is expected to facilitate empathy. The observed pattern may instead reflect an inconsistent indirect effect or a suppression-type relationship and should therefore be interpreted cautiously. Accordingly, the findings do not support the conclusion that psychological resilience causes greater empathy or that empathy constitutes a causal mechanism linking resilience to sensitivity to violence. Rather, they indicate that the relationships among these constructs may be complex and warrant further investigation. From a coach-education perspective, the findings provide a rationale for considering

empathy, perspective taking, ethical decision-making, child safeguarding, recognition of interpersonal violence, boundary awareness, and bystander intervention alongside psychological resilience. Such educational content may be relevant to the preparation of prospective coaches. However, its effectiveness should be evaluated through longitudinal or intervention-based research rather than inferred from the present correlational findings.

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AUTHOR CONTRIBUTION STATEMENT

NY, SB, OG, and SD contributed to the conceptualization and design of the study, interpretation of the findings, and development of the manuscript. NY and SB contributed to data collection and literature review. OG contributed to methodology, statistical analysis, visualization, and interpretation of the results. SD contributed to supervision, validation, and critical revision of the manuscript for important intellectual content. All authors contributed to reviewing and editing the manuscript, approved the final version, and agreed to be accountable for the integrity and accuracy of the paper.

AI DISCLOSURE STATEMENT

During the preparation of this manuscript, the author(s) used OpenAI's ChatGPT (GPT-5.6) solely for translation, English-language editing, and improving the clarity, readability, and grammatical accuracy of the text. The tool was not used to generate research data, perform statistical analyses, formulate scientific conclusions, or make substantive decisions regarding the interpretation of the findings. All AI-assisted text was critically reviewed, verified, and, where necessary, revised by the author(s). The author(s) take full responsibility for the accuracy, originality, integrity, and final content of the manuscript.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest related to the publication of this article, whether financial, institutional, or personal, that could influence the research process, analysis, writing, or publication of the paper.

ETHICAL APPROVAL

All stages of the research were conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Ethical approval for the study was obtained from the Ethics Committee for Social and Human Sciences Research at Istanbul University-Cerrahpaşa. The research application was reviewed at the committee meeting held on April 7, 2026, and was unanimously deemed ethically appropriate (Meeting Decision No. 2026/267).

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