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# Relationship Between Autonomy Support Coaching Perceived by Taekwondo Athletes and Interruption Intention: Mediating Role of Emotional Intelligence

Youngtaek Oh <sup>D1ABCD</sup>, Yoo-Jin Cho <sup>D2BD</sup>

<sup>1</sup> Sports Promotion Center, Jeju National University, Jeju, Korea <sup>2</sup> Department of Taekwondo, College of Martial Arts Yong In University, Gyeonggi-do, Korea

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# Abstract

*Objective:* This study aimed to examine the causal relationship between autonomy support coaching, emotional intelligence, and interruption intention as psychosocial variables among current taekwondo athletes in Korea. *Methods:* In this study, 217 professional and university athletes registered with the Korea Taekwondo Association in 2020 were evaluated for autonomy support coaching, emotional intelligence, and interruption intention. SPSS 18.0 and Amos 18.0 were used to analyze the collected data. *Results:* Autonomy support coaching recognized by taekwondo athletes had a negative and positive effect on interruption intention and emotional intelligence, respectively. Moreover, emotional intelligence has a negative effect on interruption intention. The mediating effect was validated based on direct effects, which revealed that autonomy support coaching had a negative effect on interruption intention support coaching the technique of emotional intelligence of university and adult taekwondo athletes. Such outcomes can serve as a foundation for athletes to have the opportunity to participate in sports in a mature manner and promote positive changes in sports culture.

**Keywords:** autonomy support coaching; emotional intelligence; interruption intention; social competence

Author for correspondence: Youngtaek Oh, email: oyt0712@jejunu.ac.kr

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### **INTRODUCTION**

Emotional intelligence (EI) is an adaptive perceptual ability wherein a set of abilities (i.e., verbal and nonverbal) enables individuals to generate, recognize, express, understand, and evaluate their and others' emotions, which can direct the thoughts and actions that athletes use to successfully manage environmental demands and pressure [1]. Cooper and Sawaf [2] state that people with high emotional intelligence are better at evaluating and controlling their emotions. Therefore, they are more likely to maintain higher satisfaction with their social life than those with low emotional intelligence. For example, people with high emotional intelligence are better at identifying frustration and stress.

They were flexible in controlling their emotions to reduce stress. They reported that, because people with high emotional intelligence can understand the cause of stress and develop strategies and patience to manage negative results, they are more resilient. On the other hand, people with low emotional intelligence lack awareness regarding their feelings and ability to cope when encountered in difficult situations, which aggravates stress and reduces their satisfaction in social life [3].

Anthropologists assert that the proper expression of emotions and awareness of others' emotional expression are related to successful functions and effective leadership in society [4]. Emotional intelligence capabilities, including transformational leadership [5], confidence, self-awareness, transparency, and empathy, are considered essential factors in conveying a vision for the future [6]. Based on this theoretical background, this study investigated autonomy support coaching as an independent variable and interruption intention, which athletes may impulsively experience, as a dependent variable. According to the cognitive evaluation theory under the self-determination theory of Deci and Ryan [7,8], autonomy support coaching recognizes players' thoughts and emotions in sports events; respects their individual initiatives, behavior regulation, and choices; and helps them participate in these events.

When an athlete truly "gives up" on their career because of personal psychological and socioenvironmental factors, such as discomfort, stress, and exhaustion, experienced during athletic activities, it is referred to as interruption intention. Such interruption intention is engendered by various factors, such as socioeconomic status [9] and stress and optimism [10], which interfere with athletic and academic studies. Therefore, Gardner et al. [11] explained that future research is required to understand the cause of interruption intention among athletes and to prevent it.

In summary, the leadership of a coach in the field of sports has a significant psychological and social impact on athletes. The use of positive feedback will foster a positive mindset among athletes, whereas negative feedback will arouse negative experiences, such as stress and exhaustion. If athletes can understand and manage their emotions and those of others', they can develop the ability to mitigate negative psychological effects by generating a positive attitude.

According to numerous scholars, people with high emotional intelligence experience success in education, work, and life [12], abilities related to emotional intelligence [13], personality characteristics [14], and affective wellbeing. Moreover, they are reported to maintain cognitive and social functions [15], psychological wellbeing [16], effective leadership, and other actions and performances required by organizations [17].

Therefore, this study aimed to evaluate the role of emotional intelligence as a mediating variable in the relationship between autonomy support coaching and interruption intention in elite taekwondo athletes. The application of this research can serve as a foundation for athletes to participate in sports in a more mature manner and thereby cultivate positive changes in future sports culture.

## **METHODS**

#### Participant

The subjects of this study are professional and university taekwondo team athletes registered with the Korea Taekwondo Association in 2020. To select subjects, Non-probability purposive sampling was

performed. A total of 230 questionnaires were collected, but only 217 questionnaires were selected as the final valid sample after excluding 13 invalid questionnaires. A total of 217 athletes were selected, with 149 males (68.7%) and 68 females (31.3%). 197 University teams (90.8%), 20 professional teams (9.2%), athletic career; 3-5 years 5 (2.3%), 5-7 years 48 (22.1%), 7 years or more 164 (75.6%).

#### Procedure

#### 1) Autonomy support coaching

The scale developed by Williams and Deci [18] was used for autonomy support coaching. The subjects were asked to respond using a five-point Likert scale. From the scale, two questions that lacked commonality were eliminated through exploratory factor analysis, and one factor with seven questions was selected (Kaiser-Meyer-Olkin [KMO] measure = .894, Bartlett's test of sphericity test  $\chi^2$  = 1128.168, d*f* = 21, *p* < 0.001). Reliability coefficient evaluated using Cronbach's  $\alpha$  was high with 0.92. Confirmatory factor analysis revealed a relatively good fit index ( $\chi^2$  = 21.661, d*f* = 11, *p* < 0.05, Q = 1.969, Bollen's Incremental Fit Index [IFI] = 0.991, Tucker-Lewis Index [TLI] = 0.982, Comparative Fit Index [CFI] = 0.991, Root Mean Square Error of Approximation [RMSEA] = 0.067).

#### 2) Emotional intelligence

The scale developed by Wong and Law [19] was used for emotional intelligence. The questionnaire comprised 16 questions and measured responses on a seven-point Likert scale. One question lacking commonality was eliminated through exploratory factor analysis and four factors were selected (KMO = .869, Bartlett's test of sphericity test  $\chi^2$  = 2149.130, d*f* = 105, *p* < 0.001). Reliability coefficients for self-emotional appraisal [SEA], others' emotional appraisal [OEA], use of emotion [UOE], and regulation of emotion [ROE] were 0.86, 0.90, 0.86, and 0.89. Confirmatory factor analysis revealed a relatively good fit index ( $\chi^2$  = 263.320, d*f* = 84, *p* < 0.001, Q = 3.135, IFI = 0.916, TLI = 0.893, CFI = 0.915, RMSEA = 0.099).

#### *3) Interruption intention*

The scale created by Park et al. [20] was used. This Korean version was based on that of Ryan and Deci [21] wherein the concept of motivation, interruption intention, and negative attitude toward taekwondo were extracted from self-determination motivation. This scale comprises 10 questions, and the subjects were asked to respond using a five-point Likert scale. One question that lacked commonality was eliminated through exploratory factor analysis, and one factor with nine questions was selected (KMO measure = 0.937, Bartlett's test of sphericity  $\chi^2$  = 1931.070, d*f* = 36, *p*< 0.001). The reliability coefficient was 0.96. Confirmatory factor analysis revealed a relatively good fit index ( $\chi^2$  = 57.348, d*f* = 19, *p* < 0.001, Q = 3.018, IFI = 0.980, TLI = 0.962, CFI = 0.980, RMSEA = 0.097).

#### Method of Analysis

Data were collected by one researcher and seven research assistants between August and September 2020. The questionnaire was distributed, the athletes were asked for consent, provided with detailed explanation, and requested to provide sincere responses. Approval for this research was granted by the Institutional Review Board at a university with which one of the authors is affiliated.

The collected data were analyzed in accordance with the purpose of the study by using SPSS 18.0 and Amos 18.0 statistical programs. First, frequency analysis was performed. Second, the Cronbach's  $\alpha$  values were calculated to validate the reliability of each measurement tool. Exploratory and confirmatory factor analyses were performed to construct validity. Third, Pearson product–moment correlation coefficients were calculated. Fourth, structural equation modeling was used to validate the mediating role of emotional intelligence in the correlation between autonomy support coaching and interruption intention. For emotional intelligence, subfactors were used as measurement variables. To construct variables for autonomy support coaching and interruption intention, three parcels (parcel: a suite of questions) were developed for each latent variable by applying the methods proposed by Russell et al. [22] and Oh [23].

# RESULTS

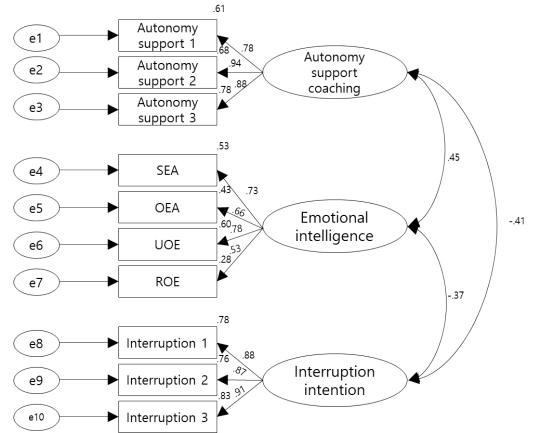
#### Result of Statistical and Correlation Analyses

The calculated average, standard deviation, skewness, kurtosis, and correlation coefficient of the variables extracted from exploratory factor analysis (Table 1). Correlations were performed to examine overall relationships between variables, and all variables were found to have correlations below 0.56, confirming the absence of multicollinearity [24].

Variable	Autonomy support coaching (A)	Self-emotional appraisal (B)	Others' emotional appraisal (C)	Use of emotion (D)	Regulation of emotion (E)	Interruption Intention (F)	
В	0.29**						
С	0.37**	0.56**					
D	0.42**	0.56**	0.45**				
Е	0.25**	0.32**	0.33**	0.49*			
F	-0.44**	-0.27**	-0.19**	-0.38**	-0.20**		
M±SD	4.03±.66	4.83±.88	5.07±1.02	4.96±1.03	4.94±1.31	2.49±.97	
Skewness	-0.23	0.17	0.22	0.01	-0.31	0.31	
Kurtosis	-0.53	0.59	-0.75	0.05	0.30	-0.49	

Table 1. Correlation coefficient between measurement variables.

M– mean, SD– standard deviation, \*p<0.05, \*\*p<0.01



SEA - self-emotional appraisal, OEA - others' emotional appraisal, UOE - use of emotion, ROE - regulation of emotion

Figure 1. Analysis of measurement model among variables.

Route		SE	CR	р	SRW	SMC
Emotional intelligence ← Autonomy support coaching		0.07	5.55	0.001	0.45	0.20
Interruption intention ← Autonomy support coaching		0.10	-3.81	0.001	-0.30	0.21
Interruption intention ← Emotional intelligence		0.13	-2.75	0.010	-0.24	0.21
Autonomy support coaching 8 ← Autonomy support coaching					0.88	0.84
Autonomy support coaching 7 ← Autonomy support coaching	1.07	0.06	18.13	0.000	0.94	0.77
Autonomy support coaching 6 ← Autonomy support coaching	0.85	0.06	14.28	0.000	0.78	0.78
Self-emotional appraisal ← Emotional intelligence	1.00				0.73	0.28
Others'emotional appraisal ← Emotional intelligence		0.13	8.28	0.000	0.66	0.60
Use of emotion ← Emotional intelligence		0.14	9.15	0.000	0.78	0.43
Regulation of emotion ← Emotional intelligence		0.16	6.82	0.000	0.53	0.53
Interruption intention $6 \leftarrow$ Interruption intention					0.88	0.61
Interruption intention $7 \leftarrow$ Interruption intention		0.06	17.61	0.000	0.87	0.88
Interruption intention $8 \leftarrow$ Interruption intention		0.06	18.78	0.000	0.91	0.78

Table 2. Estimated value of path coefficient of measurement model.

E - estimate, SE - standard error, CR - critical ration, SRW - standardized regression weights, SMC - squared multiple correlations, p - statistical significance

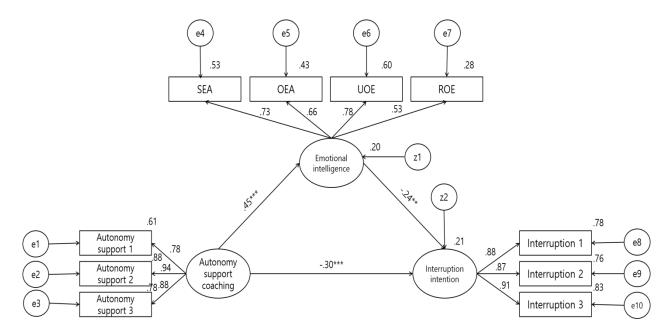
#### Measurement Model Analysis

The measurement model was validated to determine whether the variables in the model appropriately measured the latent variables. The analysis revealed that the goodness of the measurement model was appropriate ( $\chi^2$  = 58.729, d*f* = 32, *p* < 0.01, Q = 1.835, Bentler-Bonett Normed Fit Index [NFI] = 0.953, RFI = 0.934, IFI = 0.978, TLI = 0.969, CFI = 0.978, RMSEA = 0.062). Factor loadings for the latent variable of each of the 10 variables were all significant as *p*<0.001 (Figure 1).

#### Validation of Structural Model

A structural model was constructed to examine the mediating effect of EI in the relationship between autonomy support coaching and interruption intention. Following the verification of the mediating effect proposed by Holmbeck [25], autonomy support coaching (the independent variable) had a direct, significant, and negative effect (–) on interruption intention (the dependent variable) ( $\beta$  = -0.41, *p*<0.001).

Emotional intelligence, a mediating variable, was then inserted into the model, and a structural model was constructed wherein the direct path between autonomy support coaching (a predictor variable) and Interruption intention (an outcome variable) was eliminated. The validation results revealed that the goodness of the complete mediation model was excellent ( $\gamma^2 = 72.998$ , df = 33, *p*<0.001, Q = 2.212, NFI = 0.942, RFI = 0.921, IFI = 0.967, TLI = 0.955, CFI = 0.967, RMSEA = 0.075). Autonomy support coaching, the predictor variable, validated the partial mediation model including the direct path to interruption intention which is the dependent variable. The validation results revealed that the partial mediation model is appropriate for the data ( $\chi^2$  = 58.729, d*f* = 32, *p* < 0.001, Q = 1.835, NFI = 0.953, RFI = 0.934, IFI = 0.978, TLI = 0.969, CFI = 0.978, RMSEA = 0.062). The path coefficients of the model were significant (p < 0.001). The  $\chi^2$  difference test was conducted to determine the difference between the fitness of partial and full mediation models, which revealed a significant difference ( $\Delta \chi^2 = 14.269$ , df = 1, p < 0.001). Therefore, the partial mediation model was selected as the final model as show in Figure 2 and Table 2. Figure 2 reveals that autonomy support coaching had a significant negative effect (–) on interruption intention ( $\beta = -0.30$ , *p*<0.001) and a significant positive effect (+) on emotional intelligence ( $\beta$  = 0.45, *p*<0.001). Emotional intelligence had a significant negative effect (–) on interruption intention ( $\beta = -0.24$ , *p*<0.01). Furthermore, the mediating effect on emotional intelligence was analyzed. The result of indirect effect analysis was -0.14, with confidence interval between -0.26 and -0.06 excluding 0. It revealed that the indirect effect was significant at a 0.05 level.



SEA - self-emotional appraisal, OEA - others' emotional appraisal, UOE - use of emotion, ROE - regulation of emotion; \*\*p<0.01, \*\*\* p<0.001

Fig 2. Finalized Hypothesized Model.

# DISCUSSION

Emotional intelligence is one of the most crucial attributes in sports. It can contribute to the important interpersonal relationship between coaches and athletes concerning motivation and performance [26]. In particular, emotional intelligence, aids in accurate recognition of emotions, can help understand interpersonal relationships and emotions of others, thereby allowing coaches to infer and respond appropriately to athletes' emotions and intentions [27]. Athletes are emotionally stable and can intentionally express their emotions [28]. emotional intelligence is associated with performance, stress response, and psychological skills. However, few studies have investigated its association with athletic coaching [29]. Therefore, this study aimed to validate the mediating role of emotional intelligence in the relationship between types of coaching and interruption intention in sports. As the first research involving taekwondo athletes, it can contribute significantly to the development of Sports Psychology and Sociology. The results of this study can be interpreted as follows.

First, autonomy support coaching had a significant negative effect on interruption intention. The results support the findings of Jõesaar [30] by showing that autonomy support from coaches has a significant positive effect on the intrinsic motivation, which is the driving force of the athlete's persistence in sports. Autonomy support provided by teachers or coaches has a positive effect on basic psychological requirements and intentional physical activities [31] in the educational [32] and athletic [33] contexts based on the self-determination theory [8], which indirectly supports this study. That is, active support and positive feedback from coaches have been shown to discourage athletes to give up on sports and increase their will to exercise and participate more actively and enthusiastically [34].

Autonomy support coaching had a significant positive effect on emotional intelligence. Chan and Mallett [35] reported that the effective coaching ability of a leader improves with high emotional intelligence. Hwang et al., [36] conducted structural equation modeling on 323 basketball coaches and found a close relation among emotional intelligence, coaching effectiveness, and leadership. Therefore, coaches can help athletes grow by providing the opportunity for image training and respect their opponents by providing guidance for tactics and chances to understand and analyze the tactics. In addition, emotional intelligence had a significant negative effect on interruption intention. Research by Teques et al. [37] showed that emotional intelligence has a significant negative effect on behavioral patterns, thus indirectly supporting this study. Although the lack of the direct validation of the relation between emotional intelligence and interruption intention limits comparison and analysis in previous studies, this study suggests that emotional intelligence is an antecedent to persistent participation in sports and thus reduces the desire of interruption intention [37].

Finally, the mediating effect of emotional intelligence reduces interruption intention as autonomy support coaching significantly and negatively affected interruption intention by mediating the relationship between autonomy support coaching and emotional intelligence. emotional intelligence had significant negative effect on interruption intention in a study by Schlechter [38], which supports the results of this study. It supports the research in this study because interruption intention was reduced with increasing trust and faith. emotional intelligence indicates the inner tendency of a person to consider and respect others and the ability to overcome difficult processes in sports. These aspects are necessary attributes for young teenager athletes who have just started out.

In summary, athletes tend experience difficulty in communicating their opinions to their coaches despite their close relationship in the sports field. This position can be understood because a coaching practice methodology that was used to guide athletes involves coercive guidance. However, new coaches have a different attitude. They aim to communicate with the athletes to improve their technical skills and empathy. The ability to understand and empathize with other people's feelings varies depending on the individual's personality. Therefore, comfort, information, and choices from the coaches to the athletes can contribute to the reduction of interruption intension and thereby motivate the athletes to devote themselves to training with their teams.

If the active use of autonomy support by the athletic coaches encourages the athletes to think, sympathize, and care for others, the athletes will be able to participate in the training with a more mature attitude. Various studies on emotional intelligence have been conducted on athletes in team sports, including soccer [39], basketball [40]. However, to the best of our knowledge, this is the first study to produce meaningful results for the athletes of taekwondo, which is a competitive sport. Therefore, this study is expected induce a profound change and have a positive impact on the coach–athlete relationship and sports culture in the future.

### **CONCLUSION**

This study aimed to verify the mediating effect of emotional intelligence in the relationship between the types of autonomy support coaching perceived by university and adult taekwondo athletes and interruption intention in sports. The following conclusions were obtained: Autonomy support coaching had a significant negative effect on interruption intention, Autonomy support coaching had a significant positive effect on emotional intelligence. Emotional intelligence had a significant negative effect emotional intelligence on interruption intention, Autonomy support coaching had significant negative effect emotional intelligence on interruption intention, autonomy support coaching had significant negative effect emotional intelligence on interruption intention, how support coaching had significant negative effect emotional intelligence on interruption intention through emotional intelligence.

This study found that emotional intelligence is crucial as a mediating variable for elite university and professional taekwondo athletes. This study is the first research to evaluate the taekwondo athletes' perceived ability, expressiveness, and empathy for others. Second, further research is required to verify that these results can be reproduced in young athletes. Third, emotional intelligence is one of the most active research topics in the field of business administration. It is recommended that more studies be conducted in the field of physical education and more attention be provided to the development of emotional intelligence among athletes, which can subsequently encourage them to participate in sports activities. Therefore, This study highlights the importance of the autonomy-supportive coaching function [41]. We hope to increase the importance of autonomysupportive coaching and the educational environment by utilizing coaching education programs. To put it another way, it implies that there is a need to create an environment in which coaches can train athletes in a pleasant environment with the emotional intelligence of players.

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