

Comparing Emotional Intelligence and Team Cohesion of Elite and Amateur Table Tennis Players

Fahimeh Taghizadeh and Masoumeh Shojaie

Al-Zahra University, Iran

ABSTRACT

The goal of the present research is to analyze the relation between emotional intelligence and team cohesion among elite and amateur table tennis players. To reach that goal, 47 elite and 44 amateur players from West Azerbaijan, Tehran, Kurdistan, Mashhad and Yazd were selected. Emotional intelligence questionnaire (Shutt) and The Group Environment Questionnaire (Carron, Widmeyer and Brawley) were used to collect data. Data analysis was conducted by applying the Two-way Analysis of Variance (ANOVA) and Pearson's Correlation Coefficient. The results showed that level of proficiency does not influence the emotional intelligence ($P>0.05$), but gender affects emotional intelligence ($p\leq 0.05$). In addition, there is not a significant relation between emotional intelligence and team cohesion and its subscales in amateur players ($P>0.05$); however, there is a significant relation between EI and group cohesion in elite athletes ($P\leq 0.05$). Furthermore, Level of proficiency and gender do not have any effect on group cohesion ($P>0.05$). Among the subscales of group cohesion, individual attraction to group- social found to be higher in male athletes comparing with female players.

Key words: *emotional intelligence, team cohesion, level of proficiency, table tennis*

INTRODUCTION

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Many scientific studies have been made on emotions and affections in recent years. More and more sports psychologists suggest that emotional intelligence could serve important role in different fields of sports. Emotional intelligence includes distinguishing and controlling emotions in order to influence one's thoughts and behavior (Bradberry, Greaves, 1953)[1]. It is also defined as the ability to apply logical reasoning about emotions and making use of excitements to enhance your thoughts. Reports indicate that emotional intelligence is the most objective measure to evaluate performance in human activities. It is proved that emotional intelligence is an effective measure to evaluate capabilities of an individual (Ajayi, 2006)[2]. Apparently, lower emotional intelligence poses social skill problems for a typical person. A person's share of emotional intelligence sets a proper standard to evaluate his behavior since it plays a significant role in human beings' success (Hosseinabadi, 2006)[3]. The same statement is true about athletes; sportspeople with higher emotional intelligence give better performance (Cheng-en Ho, 2006) [4].

Noorbakhsh et al found, in a study on female high-school students, that talented athletes demonstrate higher emotional intelligence (2010) [5]. A research conducted by Saklofske (2007) [6], also revealed that there was a significant difference in emotional intelligence between athletes and other people. Ajayi, in 2006, noted that amateurs improved their emotional intelligence as well as their performance after taking a course in emotional intelligence. In the result of Mohammad Nejad and Soleiman Nejad's study (2012), about emotional intelligence and mental health education managers, there was a relation among women samples [7]. The results of other study by Abdolvahabi,

Bagheri, Haghighi and Karimi (2012) demonstrated a significant relationship between emotional awareness, empathy, and self-efficacy in theory courses for Physical Education Teachers [8].

Gender is a relevant factor considered during studies on emotional intelligence. In Martin, Ramalho and Morin's comparative meta-analysis (2010) [9], gender had a big influence on the closeness of relation between emotional intelligence and health.

Emotional intelligence has been the subject of many pieces of research. It is the ability to understand, control, apply and regulate excitements in oneself and others (Salovey & Mayer, 1990) [10].

Higher emotional intelligence leads to more successful adaptation of people to environment and environmental stimuli. The adaptation, in turn, brings about an athlete's success in team sports (Besharat, 2006) [11]. Emotional intelligence can also help athletes and coaches realize the emotional atmosphere of their teams (Slaski & Cartwright, 2002) [12].

In addition, leadership, cohesion and effective communication are key elements of sportive success (Meyer & Fletcher, 2007) [13]. Also as noted there is a Relationship between Coach's Leadership Styles and Group Cohesion in sport team. Results of Vahdani, Sheikhyousefi, Moharramzadeh, Ojaghi and Salehian's study (2012) showed coach's styles of training and instruction, democratic, social support and positive feedback were all positively correlated to group cohesion and autocratic style negatively correlated to group cohesion [14]. Also in an other study about coaches power supply and team cohesion among sport teams indicated that each coach's power supplies play a decisive role in the athletes team cohesion (Rahman poor, Ghofrani, Marefati) [15] Other studies show that emotional intelligence occupies a prominent place in academic and functional atmospheres (Petrides, Furnham and Fredrickson, 2004)[16]. Singh-Gill (2010) [17] held that there was a relation between emotional intelligence and mental skills of a person. These variables could play a role in emotional control and a successful performance.

Emotional intelligence leads to the improvement of mental health, amity, social adaptation, and emotional well-being. As a result, a sense of life satisfaction helps people establish better personal relationships with other members of the society. Moreover, anticipation of excitement, the power to control them and implementation of a sensible approach yields the same result (Abdoli, Sani, Fathi Rezai, 2009)[18]

Team cohesion is also a factor that scholars find so appealing. Sports psychologists believe getting successful is in direct relation with setting a common goal toward which a team works. According to Carron (1982)[19], "Cohesion is a dynamic process displaying a team's tendency to keep sympathetic and loyal to each other in order to pursue the group's goals."

The feeling of being united is called group cohesion. Unity and group cohesion is a crucial element to reach goals in sports, especially group sports. In group sports that strong interaction is a clear factor, success is attained when team members cooperate effectively and harmoniously (Moradi, Koozechian, Jafari, Ehsani, 2004) [20].

Cooperative or interactive sports require different levels of cooperation or interactive dependence. For example, cohesion plays an important role in soccer, but it doesn't have such a prominent role in baseball (Murray, 2006) [21]. Westre and Weiss (1991) [22] maintained that individual and team success heavily depends on leadership and cohesion of a team. In a research on elite basketball and soccer players, Carron, Bray and Eys (2002) [23] held that team success is in relation with team cohesion.

Many pieces of research have also been carried out to find the effects of goal-setting (Widmeyer, Ducharme, 1997) [24] and leadership on cohesion and success (Ramezaninejad, Keshtan, 2009, Murray, 2006, Gardner., Shields, Bre-demeier & Bostrom, 1996, Moradi, et al, 2004) [25, 21, 26, 20].

Results of the research by Dolan and Tzafrir (2010) [27] on basketball, handball, futsal and hokey, revealed an environment that enhances cohesion, increases reliance upon teammates and concern for colleagues would help players improve their performance.

It is believed that cohesion has a significant effect on players' personal qualities (Lowther, Lane & Lane, 2002, Eys, Hardy and Carron, 2003) [28, 29]. Van Raalte, Cornelius, Linder & Brewer (2007) [30] proved in a research that proper behavior by athletes improve their social cohesion. Terry, et al (2000) [31] believed that being members of a

cohesive team, players must adhere to a clear code of behavior. A cohesive team not only will create a supporting environment in terms of engendering feelings of belongingness, but also provide individuals with people to confide in (Lowther, et al, 2002) [28]. These mental states could bear some relation with emotional intelligence and, as a result, with team cohesion. Abdoli et al (2009) [18] proved in their research that there was a significant relation between emotional intelligence and team cohesion.

Having noted all that, the purpose of the current research is to compare emotional intelligence and team cohesion among elite and amateur table tennis players.

MATERIALS AND METHODS

The current study is a field research employing a causal comparative method. Its statistical population consists of, 47 elite and 44 amateur players from West Azerbaijan, Tehran, Kurdistan, Mashhad and Yazd (51 women and 40 men). Shutte's Emotional intelligence scale (1998) [32] was used to measure the population's emotional intelligence. Shutte's scale includes 33 questions – 13 for the appraisal and expression of emotion, 10 for regulation of emotion and 10 for utilizing it. The questionnaire was based on 5 degree Likert scale (1 = strongly disagree to 5 = strongly agree). A research by Khosrow Javid in 2002 showed that the overall validity of emotional intelligence measured through this scale was 81%; the three subscales (appraisal and expression of emotion, utilization of emotion, regulation of emotion) had 78%, 67% and 50% validity respectively. Correlation was significant in $P < 0.01$.

In this research we also used Caron, Widener and Brawley's Group Environment Questionnaire (GEQ), including 18 questions, to measure group cohesion. The questionnaire is used for situations in which activity is considered to be a basic factor. The reliability of the test, by means of Cronbach's Alpha, was found to be 81%. The questionnaire makes use of nine point Likert scale (9 = strongly agree, 1 = strongly disagree) to measure the following subscales: 1) individual attraction to the group-social, 2) individual attraction to the group-task, 3) group integration – task, 4) group integration – social. In order to analyze the data, we used Pearson's correlation coefficient and the two-way Analysis of Variance (ANOVA) in the statistical SPSS software (version 18). The level of significance is considered to be $p < 0.05$.

RESULTS AND DISCUSSION

The results of the two-way Analysis of Variance (ANOVA) are presented in Table 1. According to the table, results indicate that the level of proficiency ($F(1, 90) = 1.846, P > 0.05$) and gender ($F(1, 90) = 1.786, P > 0.05$) do not have any effect on team cohesiveness. In addition, level of proficiency ($F(1, 90) = 0.720, P > 0.05$) does not have an impact on Emotional Intelligence, but gender ($F(1, 90) = 5.974, P \leq 0.05$) affects EI. The results obtained from 2×2 ANOVA show that there are not reciprocal effects between level of proficiency and gender on subscales of group cohesion ($F(1, 90) = 1.695, P > 0.05$) and emotional intelligence ($F(1,90) = 0.710, P > 0.05$) (see Table 1).

Table 1. Results of the Analysis of Variance (ANOVA) of the effect of independent variables on group cohesion and emotional intelligence

Dependent Variable	Source of effect	df	Square of Average	F	Sig.
Group Cohesion	level of proficiency	1	2.103	1.846	0.178
	gender	1	2.034	1.786	0.185
	level of proficiency \times gender	1	1.931	1.695	0.196
Emotional Intelligence	level of proficiency	1	0.142	0.720	0.398
	gender	1	1.178	5.974	0.017*
	level of proficiency \times gender	1	0.140	0.710	0.402

The results of the Multivariate Analysis of Variance (MANOVA) are presented in Table 2. According to the table, the results show that level of proficiency (Wilks' $\lambda = 0.96, F(4,84) = 0.963, P > 0.05$) and gender (Wilks' $\lambda = 0.94, F(4,84) = 1.292, P > 0.05$) do not have any effect on subscales of group cohesion. Furthermore, level of proficiency (Wilks' $\lambda = 0.82, F(3,85) = 6.16, P > 0.05$) does not produce any effect on subscales of emotional intelligence; however, gender (Wilks' $\lambda = 0.94, F(4,84) = 1.292, P \leq 0.001$) influences the subscales of emotional intelligence. The results of 2×2 MANOVA show that there are not reciprocal effects between level of proficiency and gender on subscales of group cohesion (Wilks' $\lambda = 0.98, F(3,84) = 0.42, P > 0.05$) and emotional intelligence (Wilks' $\lambda = 0.98, F(3,85) = 0.55, P > 0.05$) (see Table 2).

Table 2. Results of the Multivariate Analysis of Variance (MANOVA) of the effect of independent variables on group cohesion and emotional intelligence

Dependent Variable	Source	Wilks' λ	df	F	Sig.	Partial η^2
Subscale of Group Cohesion	level of proficiency	0.96	4(84)	0.963	0.432	0.044
	gender	0.94	4(84)	1.292	0.280	0.058
	level of proficiency \times gender	0.98	4(84)	0.420	0.794	0.020
Subscale of Emotional Intelligence	level of proficiency	0.99	3(85)	0.279	0.840	0.010
	gender	0.82	3(85)	6.16	0.001*	0.18
	level of proficiency \times gender	0.98	3(85)	0.550	0.649	0.019

Considering the sources of effect in subscales of group cohesion, the results of between-group test are presented in Table 3. The results of between-group test show that the main effects of level of proficiency on subscales of group cohesion among elite athletes do not differ with those of amateur players ($P > 0.05$). According to the table, female players (M-5.68, SD-1.17) display stronger attraction than male athletes (M-5.14, SD-1.18) towards Group-Social. In addition, based on the obtained results, the simultaneous effect of level of proficiency and gender on subscales of group cohesion is not statistically significant ($P > 0.05$) (See Table 3).

Table 3. the results of between-group test in view of sources of effect on subscales of group cohesion

Source	Subscales of group cohesion	Average of Squares	df	F	Sig.	Partial η^2
Level of Proficiency	Individual Attraction to the Group- Task	1.905	1	0.557	0.458	0.010
	Individual attraction to the Group- Social	1.189	1	0.854	0.358	0.006
	Group Integration- Task	5.948	1	2.931	0.090	0.033
	Group Integration- Social	0.594	1	0.208	0.649	0.002
Gender	Individual Attraction to the Group- Task	0.386	1	0.113	0.738	0.001
	Individual attraction to the Group- Social	6.955	1	4.997	0.028*	0.054
	Group Integration- Task	0.147	1	0.072	0.789	0.001
	Group Integration- Social	3.942	1	1.383	0.243	0.016
Level of Proficiency \times Gender	Individual Attraction to the Group- Task	3.914	1	1.144	0.288	0.013
	Individual attraction to the Group- Social	0.324	1	0.233	0.631	0.003
	Group Integration- Task	2.151	1	1.060	0.306	0.012
	Group Integration- Social	2.871	1	1.007	0.318	0.011

The results of between-group test in view of sources of effect on subscales of emotional intelligence are presented in Table 4. The results of between-group test indicate that main effects of level of proficiency on subscales of emotional intelligence in elite athletes are similar to the results obtained from amateur players ($P > 0.05$). According to the table, the subscale of emotional regulation among female players (M-4.26, SD-0.45) is higher than male players (M-3.98, SD-0.60). Furthermore, the subscale of appraisal and regulation of emotion in female players (M -4.06, SD-0.43) is more than male players (M-3.70, SD - 0.64). Based on the results, the simultaneous effect of level of proficiency and gender on subscales of emotional intelligence is not statistically significant ($P > 0.05$).

Table 4. results of between-group test considering the sources of effect in subscales of emotional intelligence

Source	Subscales of EI	Average of Squares	df	F	Sig.	Partial η^2
Level of Proficiency	Regulation of Emotion	0.231	1	0.849	0.359	0.010
	Utilization of Emotion	0.054	1	0.251	0.618	0.003
	Appraisal and Expression of Emotion	0.115	1	0.395	0.531	0.005
Gender	Regulation of Emotion	1.913	1	7.028	0.01*	0.075
	Utilization of Emotion	0.001	1	0.003	0.958	0.001
	Appraisal and Expression of Emotion	2.931	1	10.076	0.002*	0.104
Level of Proficiency \times Gender	Regulation of Emotion	0.327	2	1.200	0.276	0.014
	Utilization of Emotion	0.212	2	0.99	0.322	0.011
	Appraisal and Expression of Emotion	0.070	1	0.241	0.624	0.003

Table 5 presents the results of Pearson's correlation coefficient between emotional intelligence and group cohesion in elite and amateur Table Tennis players. According to the table, there is not a significant relation between emotional intelligence and group cohesion and its subscales in amateur players ($p > 0.05$). However, there is a significant relation between emotional intelligence and group cohesion in elite athletes ($r = 0.038$, $p \leq 0.05$). In addition, a significant relation was found between emotional intelligence and subscale of Group Integration-Task among elite players ($r = 0.046$, $p \leq 0.05$). Furthermore, there isn't any significant relation between emotional intelligence and the subscales of Individual attraction to the Group-Social, Individual attraction to the Group-Task and Group Integration-Social in

elite players ($P > 0.05$)

Table 5. Pearson's correlation coefficient between emotional intelligence and group cohesion in elite and amateur Table Tennis players

Level of Proficiency	Variables	N	r	P
Elite	EI with Individual attraction to the Group- Task	47	0.191	0.197
	EI with Individual attraction to the Group-Social	47	0.213	0.150
	EI with Group Integration- Task	47	0.293	0.046 [*]
	EI with Group Integration- Social	47	0.157	0.291
	EI with team Cohesion	47	0.304	0.038 [*]
Beginner	EI with Individual attraction to the Group- Task	44	0.083	0.593
	EI with Individual attraction to the Group-Social	44	-0.060	0.697
	EI with Group Integration- Task	44	0.202	0.188
	EI with Group Integration- Social	44	0.087	0.573
	EI with team Cohesion	44	0.112	0.470

The results confirmed that gender and level of proficiency had no effect on group cohesion. This finding is in line with Carron, Colman and Wheeler's meta-analysis (2002) [33].

In addition, the effects of gender and level of proficiency on emotional intelligence and team cohesion was not significant. But gender had a significant effect on emotional intelligence.

Among subscales, only when regulation, evaluation and expression of emotion are concerned, gender has a significant effect on emotional intelligence. In fact, women had higher emotional intelligence. This finding is in line with some studies that prove women achieve higher levels of understanding emotions in comparison with men (Jausovee & Jausovee, 2005, Kafetsios, 2004)[34, 35]. The results are also consistent with studies by Ciarrochi, Chan, Caputi and Roberts (2001) [36], Saarni [37] (2000) and Dehshiri [38] (2003). Moradi Kelardeh, Namazi Zadeh & Meshkati (2010) [39] conducted a research on a group of Epee fencers that showed there was a significant relation between emotional intelligence and level of players, though gender did not have any effect on emotional intelligence. Their result appear dissimilar to ours, perhaps because the questionnaires used in these two studies were different.

Aghai's study (2007) [40] indicated that there was no significant difference between male and female or between professional and semi-professional athlete. His study is in agreement with ours as long as the level of proficiency is concerned, although in terms of the relation between gender and emotional intelligence, the two studies produce different results.

Although gender was found to be insignificant in relation with group cohesion, but its impact on the subscale of individual attraction to group-social was reported to be significant. Another study by Paiement, Bischoff (2007) [41] proves that gender has no effect on cohesion and team success, which confirms the results produced by our research. Our analysis shows that there is no significant link between emotional intelligence and team cohesion among beginner tennis players, although the link was significant among professionals. The same study among soccer players by Abdoli et al (2009) [18] confirmed that there was a positive relationship between emotional intelligence and team cohesion. Abdoli et al. conducted their research on semi-professional athletes in the 3rd level league of Iran. Maybe that's why it confirms the current study's findings among elite players.

Some studies show that emotional intelligence is higher among athletes in comparison to ordinary people (Alian, Danesh and Nejad Farid, 2005, Narimani and Pashapoor, 2009, Aslankhani, Abdoli, Sani, Fathi Rezai, 2009)[42, 43, 44].

Narimani and Pashapoor proved that athletes in team sports show higher emotional intelligence than those who play individual sports. In addition, they proved that athletes generally have higher emotional intelligence compared with ordinary people.

In one study, researchers have found no relationship between emotional intelligence and level of skill (Aghaei, 2007) [40]. Maybe it happened because in this research the athletes were selected from among different sports.

According to Fong Li, Lu, Wang (2009) [45], college students who had a suggested level of physical activity achieved significantly higher scores than their inactive counterparts in emotional intelligence.

Team cohesion is a significant factor in team performance. Studies show that a player's performance in a collective sport is not directly influenced by co-players, although cohesion could have influence on performance (Paiement,

Bischoff, 2007) [41]. Cohesion is connected to better performance and team success (Bloom, Stevens, Wickwire, 2003; Carron, et al 2002; Loughhead, Hardy, 2006) [46, 23, 47]. Lowther and Lane (2007)[48] report significant relationships among such elements as cohesion, good character, individual satisfaction and athletic performance, while studying a group of soccer players. They deduced that higher mental power could influence attraction to group-task and attraction to group-social. In addition, group size is an important factor to be considered while studying team cohesion (Spink, 1995) [49]. Perhaps cohesion has no effect on professionalism in the present research due to the individual nature of table tennis.

A research by Besharat, Abbasi and Mirzakamsefidi (2006) [50] confirms that emotional intelligence has positive correlation with team success, although EI can only predict success when it is measured in a team sport. Therefore both emotional intelligence and cohesion are influenced by group size. This can explain why many pieces of research have suggested insignificant results.

Considering the important role beliefs and behaviors have on athletic performance (Weinberg & Gould, 2007)[51], the more emotional intelligence a person has, the more he / she can deal with its environment and sport issues (Besharat, et al., 2006)[52]. This is confirmed in the present research. Our study shows that longer experience in an individual sport leads to the players' higher emotional intelligence. Therefore athletes can improve cohesion and emotional intelligence (Collins, Durand-Bush, 2010) [53] and strategies for cognitive interventions within individuals' interaction and communication could be applied for enhancing the cohesiveness of a team (Carron, Shapcott, Burke, 2007) [54].

Therefore coaches had better take courses on emotional intelligence and team cohesion development in order to make use of academic findings especially for lower level team. In the future, researcher might consider studying the simultaneous influence of emotional intelligence and team cohesion on performance. Since group size and sport field affect group cohesion (Spink, 1995) [49], conducting research on men and women playing different sports can be interesting ideas for study, yet to be done.

COCLUSION

The results of this study showed that level of proficiency does not influence the emotional intelligence, but gender affects emotional intelligence. In addition, there is not a significant relation between emotional intelligence and team cohesion and its subscales in amateur players; however, there is a significant relation between EI and group cohesion in elite athletes. Furthermore, Level of proficiency and gender do not have any effect on group cohesion.

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