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Perceived Level of Emotional Intelligence and Sport Performance of College Varsity Athletes in Open-Skill and Closed-Skill Sports

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Abstract
This study examined the emotional intelligence (EI) and sport performance (SP) of college varsity athletes from the Laguna State Polytechnic University. A total of 112 athlete-respondents were involved in the cross-sectional survey, consisting 98 basketball players and 14 swimmers, representing the open-skill and closed-skill athletes, respectively. The perceived levels of EI and SP of the athletes were assessed through self- and coach-rating, using a structured questionnaire with Likert scale items. In general, both open-skill and closed-skill athletes often exhibited high EI levels with respect to four domains: self-awareness, self-management, social awareness, and relationship management. It was found that majority of the athletes had EI scores within the effective functioning or enhanced skills level. The possible relationship between the athletes' level of EI and SP was examined via the Spearman's correlation. Results revealed that the SP of basketball players (open-skill athletes) was significantly correlated ($P<0.01$) to their self-awareness ($r=0.353$), self-management ($r=0.319$), social awareness ($r=0.393$), and relationship management ($r=0.411$). In general, it can be deduced that the SP level of the open-skill athletes appeared to improve with increasing EI level. On the other hand, significant relationships did not exist ($P>0.05$) between the SP of swimmers (closed-skill athletes) and their EI with respect to the four domains. Implementation of motivational programs aimed at enhancing the EI levels among open-skilled athletes are recommended to boost their SP during the game.
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1.0 Introduction

The application of various psychological strategies and techniques in sports, including relaxation, goal setting, mental rehearsal, visualization, and self-talk have been associated to athletes' game performance (Clough et al., 2012). It has been suggested that emotions influence an individual's behavior, and as such, it is considered one of the major factors that determine an athlete's competence in sports. Emotional intelligence (EI) refers to the individual's ability to recognize and manage their own and the other's emotions (Goleman, 1995). Empirical evidences reveal that an athlete's EI is a potential predictor of the game performance. Crombie et al. (2009), for instance, implied that high EI gained through an ability test in cricket was significantly associated with improved performance among athletes involved in team sports. In another study involving baseball players, the average EI level was found to be positively correlated to the total number of strikeouts among pitchers. This suggests that EI is an indicator of the athlete's performance during the game. It was further supposed that athletes' having the ability to recognize one's emotional attributes, as well as that of the teammates' and opponents', are more likely to perform well during the game, particularly in team sports (Zizzi et al., 2003).

Previous researches elucidating the possible relationship between various personality variables and sport performance (SP) were mainly focused on examining significant associations between psychological skills (e.g., self-motivation, self-confidence, arousal and active concentration, attention control, stress regulation, and coping with adversities) and effective performance in sports (Bal et al., 2011). This has led to arguments concerning the validity of using various psychological inventories in the selection of athletes based on certain predictor variables for success in sports. In this regard, the development of inventories designed specifically for athletes have been advocated by eminent sport psychologists such as Anshel (2003), allowing for an objective measure of potential factors that support peak performance during sports events (Bal et al., 2011).

In general, sports may be categorized into two types: open-skill or closed-skill sports (Wang et al., 2013). Open-skill sports such as football, badminton, and basketball, involve the executions of sport skills in a constantly changing and unpredictable (Di Russo et al., 2010). Thus, athletes in are required of skills that will allow them to adapt to the instability of the environment, which is deemed to be predominantly perceptual and externally-paced (Zaugg, 2007). Closed-skill sports, on the other hand, involve a set of patterns with clear beginnings and endings.

Sports such as running or swimming are examples of closed-skill sports, whereby the sporting environments are relatively consistent, predictable, and self-paced for players (Wang et al., 2013).

This study generally aimed to determine the perceived level of EI and SP of college varsity players of the Laguna State Polytechnic University (LSPU). Specifically, the study investigated the level of EI of the open-skill (basketball) and closed-skilled (swimming) athletes, with respect to four EI domains: self-awareness, self-management, social awareness, and relationship management. The athletes' average SP score was also determined based on self-rating and coach-assessment. The possible relationship between the athletes' EI level on four domains and average SP scores was tested for significance. Results of this study will serve as basis in the formulation of effective intervention programs aimed at enhancing the game performance of the athletes, particularly those involved in swimming and basketball.

2.0 Research Methodology

2.1 Study Design

This descriptive survey based on the cross-sectional study design, which is generally employed to describe the attributes of a certain groups in terms of behavior, attitude, or perception (Mathers et al., 2009). In particular, this survey research was conducted to examine the perceived level of EI and SP among college varsity players in LSPU during the Academic Year 2017–2018. The survey comprised a population census that involved a total of 98 basketball players and 14 swimmers, representing open- and closed-skill sports, respectively. Involvement in the study was purely voluntary and participants were allowed to withdraw at any stage.

2.2 Research Instrument

A three-part structured self-administered questionnaire was designed and used to obtain the necessary data. The first part gathered the athletes' personal information including age, sex, year level, and number of years playing the sport. The second part of the survey questionnaire includes four sets of modified statement indicators based on the EI self-assessment, originally designed by Paul Mohapel for the San Diego City College MESA Program, based on the Goleman emotional competence framework (www.sonoma.edu). The five-point Likert statements were used to measure the athletes' EI level with respect to four domains: self-awareness, self-management, social awareness, and relationship management. The athletes' EI total score obtained in each of the four EI domains was also used in assessing their EI effectiveness based on a standardized scoring scheme (Table 1). The athletes' SP level was evaluated using a set of self-made Likert statements based on self- and coach-rating. The content reliability and internal consistency of the construct based on the self-made (original) statement indicators for SP was determined using Cronbach's alpha (α=0.86).

Table 1. Likert statement indicators used to assess the athletes' EI in terms of self-awareness, self-management, social awareness, and relationship management (modified from Mohapel based on the framework by Goleman, 1998).

SELF-AWARENESS	SELF-MANAGEMENT
1. My feelings are clear to me at any given moment.	1. I take responsibility of my reactions.
2. Emotions play an important part in my life.	2. I find it easy to make goals and stick with them.
3. My moods impact my co-players around me.	3. I am an emotionally-balanced person.
4. I find it easy to put my feelings into words.	4. I am a patient person.
5. My mood is easily affected by external events.	5. I accept critical comments from others without becoming angry.
6. I can easily sense when I'm going to be angry.	6. I maintain my composure, even during stressful times.
7. I readily tell others (e.g., teammates) of my true feelings.	7. I am not bothered with issues unrelated to me.
8. I find it easy to describe my feelings.	8. I restrain myself when I feel angry towards someone.
9. I am aware of what is happening to me, even when I'm upset.	9. I control urges to overindulge in things that could my well-being.
10. I am able to stand apart from my thoughts and feelings and examine them.	10. I direct my energy into creative work as hobbies.
SOCIAL AWARENESS	**RELATIONSHIP MANAGEMENT**
1. I consider the impact of my decisions on other people.	1. I am able to show my affections.
2. I can easily tell if people around me are becoming annoyed.	2. I manage my personal issues well.
3. I can sense when a person's mood changes.	3. I find it easy to share my deep feelings with other people.
4. I am empathetic when relaying bad news to others.	4. I am relatively good at motivating other people.
5. I am generally able to understand the feelings of other people.	5. I am fairly a cheerful person.
6. My co-players/teammates can tell me of the things they worry about.	6. It is easy for me to make friends with other people.
7. I get bothered seeing the suffering of other people.	7. Others perceive me as a sociable and fun person.
8. I usually know when to speak my mind and when to be silent.	8. I usually help my co-players/teammates when they need me.
9. I care with what's happening to my co-players/teammates.	9. Others can depend on me.
10. I try to understand my co-players/teammates when there is a change of plan.	10. I am able to talk to someone when they are upset.
STANDARD SCORING SCHEME FOR EI EFFECTIVENESS	
0 to 24 = area for enrichment (requires attention and development)	
25 to 34 = effective functioning (consider strengthening)	
35 to 40 = enhanced skills (use as leverage to develop weakness)	

2.3 Statistical Treatment

All survey data were organized in Microsoft® Excel and separate cross-checking was subsequently done by two different individuals. Population mean (μ) and standard deviation (SD) were used to describe the athletes' EI and SP scores. The athletes' EI effectiveness based on their EI total score in the four domains was summarized using actual counts and percentages. The effect size statistic (i.e., Hedge's ĝ) which measures the magnitude of difference with regards to the EI levels between open- (basketball players) and closed-skill (swimmers) athletes were computed (using composite mean score) using an open-access online software (www.socscistatistics.com). The Spearman's correlation in IBM® SPSS® Statistics was also employed to examine the possible relationships between the athletes' SP and EI at 95% level of confidence.

3.0 Results

3.1 Athletes' Emotional Intelligence

The EI scores of the open-skill (basketball players) and closed-skill (swimmers) athletes with reference to the four

EI domains were determined based on their personal perceptions. In general, the results show that both open- and closed-skill athletes had relatively high scores (composite μ>4.00) in the four EI domains (Table 2), suggesting that LSPU varsity players for basketball and swimming often exuded high levels of self-awareness, self-management, social awareness, and relationship management. However, it can be noted that the open-skill athletes had lower composite mean scores in EI domains relative to closed-skill athletes. Measures of effect size somehow indicated that swimmers were more often aware of themselves (μ=0.37) and of their social atmosphere (μ=0.47), relative to basketball players. On the other hand, both swimming group and basketball group revealed that often times, they have clear ideas of their feelings, and that they consider emotion as an important aspect of their lives. However, while basketball players were often aware of what is happening to them even when they are feeling upset, swimmers were more likely to be mindful and sensitive of the dynamics of their own and the other's moods and feelings. Interestingly, the result show that there was a moderate effect for self-management (μ=0.67) and a large effect for relationship management (μ=0.83). Hence, it can be regarded that the closed-skill athletes are likely to exhibit compassion and empathy more often compared to the open-skill athletes, and that are often willing to extend emotional comfort. Closed-skill athletes are also deemed to be better at regulating their emotional responses and are not easily bothered, compared to open-skill athletes.

Table 2. Self-reported EI level [composite mean (μ±SD) score] among open-skill and closed-skill athletes with respect to self-awareness, self-management, social awareness, and relationship management.

STATEMENT INDICATORS	OPEN-SKILL ATHLETE	CLOSED-SKILL ATHLETE	EFFECT SIZE (Hedge's ĝ)
Self-Awareness	3.87±0.60	4.09±0.50	0.37
Self-Management	4.00±0.53	4.35±0.46	0.67
Social Awareness	4.05±0.56	4.31±0.41	0.47
Relationship Management	4.16±0.48	4.54±0.19	0.83

ADJECTIVAL INTERPRETATIONS: [1.0] – **NEVER**; [2.0±0.99] – **RARELY**; [3.0±0.99] – **OCCASIONALLY**; [4.0±0.99] – **OFTEN**; [5.0] – **ALWAYS**
EFFECT SIZE DESCRIPTORS (Durlak, 2009): [0.20] – **SMALL EFFECT**; [≥0.5] – **MODERATE EFFECT**; [≥0.8] – **LARGE EFFECT**

The open- and closed-skill athletes were classified according to their EI effectiveness (Table 3). Most of the basketball players were found to have effective functioning in all four EI domains: self-awareness (58.2%), self-management (66.3%), social-awareness (55.1%), and relationship management (57.1%). Some of the basketball players, albeit less than the majority, also exhibited enhanced skills for self-awareness (19.4%), self-management (18.4%), social awareness (30.6%), and relationship management (34.7%). Only few (8.20% to 22.4%) among the basketball players showed lower scores (i.e., areas for enrichment) in the four EI domains. On the other hand, majority of the swimmers were shown to exhibit enhanced skills for self-management (64.3%) and relationship management (71.4%). Exactly half (50%) of swimmers also showed enhanced skills in terms of social awareness. With regards to self-awareness, 9 out of 14 (64.3%) swimmers were found to have effective functioning; while, only 1 (7.14%) had an area of enrichment for self-awareness, self-management, and social awareness. None of the swimmers, however, were classified under area for enrichment in terms of relationship management EI score. In general, the result indicates that most athletes involved in open- or closed-skill sport had EI scores that fall within the effective functioning or enhanced skill levels. Only few of the athletes were also found to exhibit area for enhancement with respect to the four EI domains. However, it can be regarded that majority of the closed-skill athletes had enhanced levels of skills in terms of their self-management, social awareness, and relationship management, compared to the closed-skill athletes.

Table 3. Frequency distribution of open-skill and closed-skill athletes based on EI effectiveness.

EI DOMAIN	AREA FOR ENRICHMENT		EFFECTIVE FUNCTIONING		ENHANCED SKILLS	
	OPEN-SKILL	CLOSED-SKILL	OPEN-SKILL	CLOSED-SKILL	OPEN-SKILL	CLOSED-SKILL
SELF-AWARENESS	22 (22.4%)	1 (7.14%)	57 (58.2%)	9 (64.3%)	19 (19.4%)	4 (28.6%)
SELF-MANAGEMENT	15 (15.3%)	1 (7.14%)	65 (66.3%)	4 (28.6%)	18 (18.4%)	9 (64.3%)
SOCIAL AWARENESS	14 (14.3%)	1 (7.14%)	54 (55.1%)	6 (42.3%)	30 (30.6%)	7 (50.0%)
RELATIONSHIP MANAGEMENT	8 (8.20%)	0 (0.00%)	56 (57.1%)	4 (28.6%)	34 (34.7%)	10 (71.4%)

3.2 Athletes' Perceived Sport Performance Level

The perceived performance level of the athletes in open- and closed-skill sports was determined based on self- and coach-rating. Table 4 shows that basketball players scored slightly higher in most of the game indicators based on coach-rating, relative to their self-rating. It can be noted that in general, basketball players were deemed to exhibit exemplary game performance more often – according to their coach, which was slightly higher relative to self-rated mean score (μ=3.81). On the other hand, swimmers, had slightly lower average SP scores from their coaches (Table 5). Thus, swimmers supposed that they perform the skills in swimming better according to their self-assessment (μ=4.36), relative to the assessment given by their respective coaches (μ=4.25).

Table 4. Perceived mean (μ±SD) level of sports performance of open-skill athletes.

STATEMENT INDICATORS	SELF-ASSESSMENT	COACH-ASSESSMENT
1. Ability to beat the defender regularly with both hands.	3.69±0.75	4.07±0.76
2. Ability to go either direction on the dribble.	3.80±0.79	3.85±0.75
3. Ability to choose the best type of pass (e.g., bounce, chest, overhead).	3.98±0.88	3.98±0.88
4. Ability to complete a no look or quick pass to an open teammate.	3.76±0.90	3.92±0.89
5. Aggressively move while in the court.	3.90±0.81	4.07±0.80
6. Beats the defender and move easily towards the goal.	3.74±0.73	4.06±0.84
7. Exhibits full knowledge of the game, including mastery of violations.	3.93±0.82	4.05±0.80
8. Exhibits excellence in shooting form and make shots from all ranges.	3.72±0.73	4.08±0.94
9. Displays exemplary shooting skill while being closely guarded.	3.74±0.77	4.13±0.82
10. Ability to interrupt the opponent's shots offensively or defensively.	3.86±0.73	4.16±0.78
MEAN COMPOSITE SCORE =	**3.81±0.55**	**4.04±0.48**

ADJECTIVAL INTERPRETATIONS: [1.0] – **NEVER**; [2.0±0.99] – **RARELY**; [3.0±0.99] – **OCCASIONALLY**; [4.0±0.99] – **FREQUENTLY**; [5.0] – **ALWAYS**

Table 5. Perceived mean (±SD) level of sports performance among closed-skill athletes.

STATEMENT INDICATORS	SELF-ASSESSMENT	COACH-ASSESSMENT
1. Able to swim at least two laps of freestyle without stopping.	4.64±0.63	4.29±0.61
2. Performs the freestyle-stroke and breathing technique efficiently.	4.50±0.65	4.07±0.62
3. Able to swim at least two lapses of back-stroke without stopping.	4.50±0.52	4.07±0.73
4. Performs the back stroke in a fairly straight manner.	4.29±0.47	3.79±0.70
5. Able to swim at least two breast-stroke without stopping.	4.36±0.63	4.29±0.73
6. Able to tread the water for at least 60 seconds.	4.14±0.66	4.71±0.47
7. Follows safe swimming protocols with minimal observable errors.	4.29±0.47	4.21±0.58
8. Performs the back stroke and breathing technique efficiently.	4.29±0.61	4.29±0.61
9. Efficiently able to exhale underwater during power phase.	4.14±0.77	4.36±0.84
10. Generally exhibits effortless swimming performance*	4.50±0.52	4.43±0.65
MEAN COMPOSITE SCORE =	**4.36±0.34**	**4.25±0.38**

ADJECTIVAL INTERPRETATIONS: [1.0] – **NEVER**; [2.0±0.99] – **RARELY**; [3.0±0.99] – **OCCASIONALLY**; [4.0±0.99] – **FREQUENTLY**; [5.0] – **ALWAYS**

* correct body positioning and proper coordination, power is present in the leg and arm action, and execute relaxed strokes with minimal resistance

3.3 Linking Emotional Intelligence and Sport Performance

The relationship between the athletes' EI and SP was examined in Spearman's correlation (Table 6). Significant positive correlations (P≤0.01), albeit in moderations, were found between the average SP scores of the basketball players (open-skill athletes) and in all four EI domains, including self-awareness (r=0.353), self-management (r=0.319), social awareness (r=0.393) and relationship management (r=0.411). The result somehow suggests that the performance level of basketball players linearly increases as their EL level improves. Significant correlations did not exist between the SP score of swimmers (closed-skill athletes) and their EI levels in the four domains. It somehow appears that the performance of swimmers is not related to their EI level.

Table 6. Correlation between the athletes' average SP score and their mean IE level in terms of emotional awareness, emotional management, social awareness, and relationship management.

TYPE OF ATHLETE	EMOTIONAL INTELLIGENCE DOMAINS			
	Self-Awareness	Self-Management	Social Awareness	Relationship Management
Open-Skill Athlete	0.353**	0.319**	0.393**	0.411**
Closed-Skill Athlete	-0.314	-0.083	-0.329	-0.296

EFFECT SIZE DESCRIPTORS (Cohen, 1988): [0.10] – **SMALL EFFECT**; [≥0.3] – **MODERATE EFFECT**; [≥0.5] – **LARGE EFFECT**

*statistically significant at 95% level (i.e., P<0.05); **statistically significant at 99% level (i.e., P<0.01)

4.0 Discussion

Emotional intelligence (EI) refers to an individual's ability to handle and to accurately identify and understand his own and others' emotions (Kulkarni et al., 2009). Moreover, one's EI is a measure of his ability to regulate his own emotions, towards making good decisions and to act effectively in a given situation (Salovey and Mayer, 1990). Bar-On (1997) defined EI as the person's adaptive mechanisms inorder to effectively cope with the immediate surroundings and become successful in dealing with the changing environmental demands, by understanding oneself and that of the others. In evaluating the EI skills of the person, Goleman (1998) has provided the basic elements which include self-awareness, self-regulation, motivation, empathy, and social skills. Thus, the EI an individual constitutes one's competencies, skills, and abilities that are essentially linked to his behavior and subsequent actions (Faltas, 2017). To date, several studies have been conducted to evaluate the potential role of EI to the individual's performance in various types of organizations including corporate workplaces, healthcare systems, and academic settings. In sports psychology, EI is considered a significant factor that influences sport performance (Kopp and Jekauc, 2018).

The present study examined the perceived EI level of college varsity athletes in LSPU, involved in open-skill (basketball) or closed-skill (swimming) sport. The athletes' EI levels were measured in terms of four EI domains: self-awareness, self-management, social awareness, and relationship management. In general, results indicate that the EI level of open-skill and closed-skill athletes, based on their personal rating, did not vary much with respect to the four EI domains. It appeared that both open-skill (basketball players) and closed-skill (swimmers) athletes often perceived themselves as having high EI levels. Majority of the athletes also exhibited effective functioning or enhanced skill level in all four EI domains. This result is similar to the findings of Mohzan et al. (2013), showing that college students enrolled in a University in Malaysia, had high levels of EI in terms of appraisal, understanding, and regulation of their own as well as of the others' emotions. Similar findings have been reported as well among semi-professional Spanish athletes in different modalities, indicating that the respondents generally exhibited high levels of EI with respect to emotional perception, management, and utilization (Castro-Sánchez et al., 2018). It has been postulated that individuals with high EI level are more likely to accept and handle both pleasant and unpleasant feelings (Mohzan et al., 2013), allowing them to cope with pressures, occasional failures, and disturbing experiences (Pfieffer, 2001). On the other hand, the self-reported EI of supervisors in an automobile company in India was revealed to exhibit low levels in all measured EI domains (Kulkarni et al., 2009). In this regard, responsive motivational programs aimed at improving the EI levels of individuals are warranted in such cases, so as to improve their well-being. Indeed, optimal performance of athletes in their sports have been found to be significantly associated with their superior emotional experiences as a function of high EI (Lane et al., 2010).

Significant correlations were found between the average SP scores of the open-skill athletes (basketball players) and their EI levels in all four EI domains. This result indicates that as the EI level of basketball players increases, their SP level also improves. Several studies have also examined the relationship of EI and SP among athletes and reported conflicting results. Consistent with the findings of the present study, Crombie et al. (2009) also demonstrated that EI level of a cricket team was positively associated with the SP level. It was found that EI significantly predicts the team's SP, suggesting that in general, EI level contributes to the success of teams involved in complex sports such as cricket. Similarly, the study of Zizzi et al. (2003) showed that EI level was positively correlated with the SP among collegiate baseball team, suggesting that EI is a significant SP indicator. However, in contrast to results of the present study, whereby significant association was not established between the EI levels and SP score of the closed-skill athletes (swimmers), the study of Petrides et al. (2006) demonstrated a positive relationship between trait EI and ballet dancing ability ratings. The aforesaid reports support the idea in sport psychology that any competitive sport is an emotion-laden environment (Kopp and Jekauc, 2018), which continuously subjects the athletes to various types of stress and emotional challenges (Meyer and Fletcher, 2007). Therefore, the athletes' SP in a given sport is significantly influenced by relationships and interactions, both as direct functions of emotions (Friesen et al., 2012; McCarthy, 2011). This idea is supported by the study of Saadati et al. (2014), whereby a negative correlation was revealed between the athletes' EI level and burnout experience.

Indeed, Sadri and Janani (2015) supposed that higher EI level results in better self-regulation among athletes. Meanwhile, the findings of Laborde et al. (2014) indicated that trait EI levels of tennis players are unrelated to their serve performance. Another report also indicated no significant relationship between the EI and SP of ice hockey athletes (Perlini and Halverson, 2006). These contradicting findings warrant additional research works, inorder to establish further the apparent connection between EI and SP.

5.0 Conclusion

In conclusion, the open-skill (basketball players) and closed-skill (swimmers) varsity athletes often exhibit high EI levels with respect to four EI domains: self-awareness, self-management, social awareness, and relationship management. Majority of the athletes exhibited EI scores within the effective functioning or enhanced skill level. Significant positive relationships between the SP scores of basketball players and their EI levels with respect to the four EI domains were also revealed. However, significant associations did not exist between the SP and EI of swimmers. Hence, it can be deduced that higher EI level was significantly associated with improved SP among athletes involved in closed-skill sports like basketball. Various motivational programs for the open-skill athletes may be executed to enhance their EI level, inorder to promote prime performance in their chosen sports.

References

Bal, B.S., Singh, K., Sood, M., Kumar, S. 2011. Emotional intelligence and sporting performance: a comparison between open- and closed-skill athletes. Journal of Physical Education and Sports Management 2: 48-52.

Bar-On, R. 1997. The emotional intelligence inventory (EQ-i). Technical Manual, Multi-Health Systems, Toronto.

Castro-Sánchez, M., Chacón-Cuberos, R., Zurita-Ortega, F., Puertas-Molero, P., Sánchez-Zafra, M., Ramìrez-Granizo, I. 2018. Emotional intelligence and motivation in athletes in different modalities. Supplementary Issue: Spring Conferences of Sports Science. III International Congress on Research and Didactics of Physical Education, 15-16 March 2018. Granada, Spain.

Clough, P.J., Earle, K., Sewell, D. 2012. Mental toughness: the concept and its measurement. In I. Cockerill (ed.), Solutions in sport psychology (pp. 32-45). London, England: Thomson Publishing.

Cohen, J. 1988. Statistical power analysis for the behavioral sciences. New York, NY: Routledge Academic.

Crombie, D., Lombard, C., Noakes, T. 2009. Emotional intelligence scores predict team sports performance in a national cricket competition. International Journal of Sports Science and Coaching 4:209 224.

Di Russo, F., Bultrini, A., Brunelli, S., Delussu, A.S., Polidori, L., Taddei, F., Traballesi, M., Spinelli, D. 2010. Benefits of sports participation for executive function in disabled athletes. J Neurotrauma 27:2309-2319.

Durlak, J.A. 2009. How to select, calculate, and interpret effect sizes. J. Pediatr. Psychol. 34:917-928.

Faltas, I. 2017. Three models of emotional intelligence. Public Policy & Administration: article accessible online at https://www.researchgate.net/publication/314213508

Friesen, A.P., Lane, A.M., Devonport, T.J., Sellars, C.N. 2012. Emotion in sport: considering interpersonal regulation strategies. Int. J. Sport Exerc. Psychol. 6:139-154.

Goleman, D.P. 1995. Emotional intelligence: why it can matter more than IQ for character, health and lifelong achievement. New York: Bantam Books.

Goleman, D. 1998. What makes a leader? Harvard Business Review: www.hbr.org

Kopp, A., Jekauc, D. 2018. The influence of emotional intelligence on performance in competitive sports: a metal-analytical investigation. MDPI Sports 8:175. doi:10.3390/sports6040175.

Kulkarni, P.M., Janakiram, B., Kumar, D.N.S. 2009. Emotional intelligence and employee performance as an indicator for promotion: a study of automobile industry in the City of Belgaum, Karnataka, India. International Journal of Business and Management 4: 161-170.

Lane, A.M., Devonport, T.J., Soos, I., Karsai, I., Leibinger, E., Hamar, P. 2010. Emotional intelligence and emotions associated with optimal and dysfunctional athletic performance. J. Sports Sci. Med. 9:388-391.

Laborde, S., Dosseville, F., Guillén, F., Chávez, E. 2014. Validity of the trait emotional intelligence questionnaire in sports and its links with performance satisfaction. Psychol. Sport Exerc. 15:481-490.

Mathers, N., Fox, N., Hunn, N. 2009. Surveys and questionnaires. National Institute for Health Research. The NIHR RDS for the East Midlands: Yorkshire and the Humber.

McCarthy, P.J. 2011. Positive emotion in sport performance: current status and future directions. Int. Rev. Sport Exerc. Psychol. 4:50-69.

Meyer, B.B., Fletcher, T.B. 2007. Emotional intelligence: a theoretical overview and implications for research and professional practice in sport psychology. Journal of Applied Sport Psychology 19:1-15.

Mohzan, M.A.M., Hassan, N., Halil, N.A. 2013. The influence of emotional intelligence on academic achievement. Procedia – Social and Behavioral Sciences 90:303-312.

Pfeiffer, S.I. 2001. Emotional intelligence: popular but elusive construct. Roeper Review 23:138–142.

Perlini, A. H., Halverson, T. R. 2006. Emotional intelligence in the National Hockey League. Canadian Journal of Behavioural Science 38:109-119.

Petrides, K.V., Niven, L., Mouskounti, T. 2006. The trait emotional intelligence of ballet dancers and musicians. Psicothema 18:101-107.

Saadati, S., Nikbakhsh, R., Afarinesh, A. 2014. The relationship between emotional intelligence and athlete burnout. Bulletin of Environment, Pharmacology, and Life Sciences 3: 61.65.

Sadri, A., Janani, H. 2015. Relationship of emotional intelligence and self-regulation of male elite swimmers. Annals of Applied Sport Science 3:9-18.

Salovey, P., Mayer, J.D. 1990. Emotional intelligence. Imagination, Cognition and Personality 9: 185-211.

Wang, C., Chang, C., Liang, Y., Shih, C., Chiu, W., Tseng, P., Hung, D.L., Tzeng, O., Muggleton, N., Juan, C. 2013. Open vs. closed skill sports and modulation of inhibitory control. PLoS ONE 8: e55773. doi:10.1371/ journal. pone.0055773.

Zaugg, H. 2007. Academic comparison of athletes and non-athletes in a rural high school. Bulletin 82:63-72.

Zizzi, S. J., Deaner, H. R., Hirschhorn, D. K. 2003. The relationship between emotional intelligence and performance among college baseball players. Journal of Applied Sport Psychology 15: 262-269.