

Full Length Research Paper

Emotional intelligence and sporting performance: A comparison between open- and closed-skill athletes

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The purpose of this investigation was to determine if there are cognitive psychological factors used in competition and training which differentiate athletes participating in an open and closed skill sport. In addition, factors discriminating successful from less successful participants in the open skill sport of football and the closed skill sport of gymnastics were identified. A total of 40 inter-varsity athletes (n = 20; footballers) from open-skill and (n = 20; gymnasts) from closed-skill sports completed the emotional intelligence questionnaire (EIQ16). The EIQ16 measures 16 emotional competencies covering the ability to accurately perceive emotions in one-self and others, use emotions to facilitate thinking, understand emotional meanings, and manage emotions. Student's t-test for independent data was used to assess the between-group differences. The level of $p \leq 0.05$ was considered significant. The results revealed significant difference in self-analysis ($p = 0.0004$), analysis of others ($p = 0.0137$), self-expression ($p = 0.0274$), thinking ($p = 0.0189$), judgment ($p = 0.0010$), problem solving ($p = 0.0310$), complexity ($p = 0.0036$), transitions ($p = 0.0013$), openness ($p = 0.0061$), self-control ($p = 0.0562$) and others ($p = 0.0490$) ($p < 0.05$) among open-skill and closed-skill athletes. Results further indicated no significant difference in the in-discrimination ($p = 0.1789$), sensitivity ($p = 0.0761$), symptoms ($p = 0.2617$), outcomes ($p = 0.0770$) and monitoring ($p = 0.2258$) ($p > 0.05$). In conclusion, emotional intelligence is an important construct in the sports domain (Meyer and Fletcher, 2007). Accordingly, interest in emotional intelligence has increased specifically in the realm of athletics (Zizzi et al., 2003). Proponents have claimed that emotional intelligence can enhance leadership performance, team cohesion, and coping with pressure.

Key words: Athlete, emotional intelligence, open and closed skill.

INTRODUCTION

Over the last two decades, sport psychology has contributed to the performance of elite athletes through the implementation and practice of psychological methods and techniques such as relaxation, goal-setting, mental rehearsal, visualization and self-talk. For the most part, this focus on psychological methods has been more widely considered by examining psychological skills derived from various personality traits and psychological

dispositions of elite athletes. There has been a great deal of interest in understanding the relationship of personality variables to sports performance, and the bulk of the quantitative research literature has identified a cluster of six broad psychological skill areas linked to effective performance reference the literature referred to. These include motivation, self-confidence, arousal and activation, concentration and attentional control, regulation of stress, and coping with adversity (Hardy et al., 1996).

Although the findings have been encouraging, questions have been raised in regard to the use of various psychological inventories to identify particular variables and select athletes based on the ability of the inventory to

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predict success. These concerns have centered on a number of core issues: 1) many of the inventories used have been traditional personality inventories and not developed for specific use with athletes; 2) many inventories have been developed in a clinical context with theoretical models of psychopathology as the underlying platform; 3) data used to validate the inventory were developed from non-athletes; 4) poor sampling techniques, experimental procedures and a lack of high quality statistical procedures to validate the tool; 5) most tools tend to be single skill focused or based on personality rather than competency based dimensions; and 6) a lack of conceptual framework for making comparisons between athletes and non-athletes. Concerns such as these have prompted eminent sports psychologists such as Anshel (2003) to call for the development of inventories designed specifically for athletes to measure the factors that support peak performance. Despite widespread use of psychological inventories in sports psychology, researchers and practitioners have questioned the utility, validity and appropriateness of certain inventories in the sports context (Orlick, 1989; Gauvin and Russell, 1993; Auweele et al., 1993). There is a growing interest in emotional intelligence in sport (Meyer and Zizzi, 2007). Recent research found emotional intelligence being related to emotions experienced before successful and unsuccessful performance (Lane et al., 2009). Lane et al. (2009) found that emotions correlating with successful performance are vigor, happiness, and calmness; whereas emotions associated with poor performance include confusion, depression and fatigue. Emotional intelligence correlated positively with pleasant emotions and negatively with unpleasant emotions. Further, Lane et al. (2009) found emotional intelligence scores correlated with frequent use of psychological skills. Athletes reporting frequent use of psychological skills (Thomas et al., 1999) also appeared to report high scores on the self-report emotional intelligence scale (Schutte et al., 1998). Research in general psychology has emphasized the utility of emotional intelligence (Austin et al., 2004; Petrides et al., 2007) and it is proposed to be a construct associated with adaptive psychological functioning (Kirk et al., 2008). Defined as 'the ability to monitor one's own and others' feelings and emotion, to discriminate among them and to use this information to guide one's thinking and actions' (Salovey and Mayer, 1990), it is a measure of emotional intelligence associated with successful performance in a number of applied settings (Van Rooy and Viswesvaran, 2004) including sport (Zizzi et al., 2003). They are also associated with a number of health-related variables, including minimizing the effects of stress (Schutte et al., 2007). The present study was conducted in order to determine if cognitive psychological factors used in competition and training are differentiated between athletes participating in an open and closed skill sport. In addition, factors discriminating successful from less successful participants in the open skill sport of football and the closed skill sport of gymnastics were identified.

METHODOLOGY

The subjects were 40 male athletes from Guru Nanak Dev University, Amritsar, Punjab, India, who represented All India Inter-University Championship, (n = 20; footballers) from open-skill and (n = 20; gymnasts) closed-skill sports. Subjects ranged in age from 18 to 28 years. All subjects, after having been informed about the objective and protocol of the study, gave their written consents and the study was approved by the local committee of ethics. Emotional intelligence questionnaire (EIQ16) was used to assess the differences of emotional intelligence among open- and closed- skill athletes.

Measures

Emotional intelligence

Intelligence questionnaire (EIQ16) was used to assess perceived emotions in ones-self and others, use of emotions to facilitate thinking, understand emotional meanings, and manage emotions. The test is based on the emotional intelligence model of Mayer and Salovey (1997). Mayer and Salovey (1997) have defined emotional intelligence as an ability to recognize the meanings of emotion and their relationships and to reason, and problem-solve on the basis of them (Figure 1).

Reading emotions

Emotional intelligence consists of four related abilities or competencies. The first of these is reading people (that is, identifying how you and those around you are feeling and being able to see how people are really feeling even when they may be putting on an outward show) and others are using emotions, understanding emotions and managing emotions. This cluster of abilities also covers the ability to express emotions appropriately for the situation. A competent manager knows what people feel, will talk about feelings, and can show how they feel.

Using emotions

This cluster of emotional competencies is about using feelings and emotions to guide your thoughts and behavior. It means getting in the mood and using feelings and emotions to facilitate thinking and decision making. The ability to use emotions can help you identify different scenarios and give you a different and enhanced perspective on issues in work and family life. It will help you see the world in different ways and appreciate other people's points of view. A skillful manager can feel what others are feeling and focus on that which is important when emotions are strong.

Understanding emotions

Understanding emotions helps predict how people will react to different situations. This cluster of abilities is about developing a map of how emotions operate, about how one emotion can lead to another and result in a particular emotional state. It covers understanding the warning signs of emotional states such as boredom, apprehension and anger. Possession of an emotional map enables one to deal more effectively with the ups and downs in career and / or lifestyle. A competent manager knows how people will react to different situations and knows what to say and what to do to get the best from themselves and from other people.

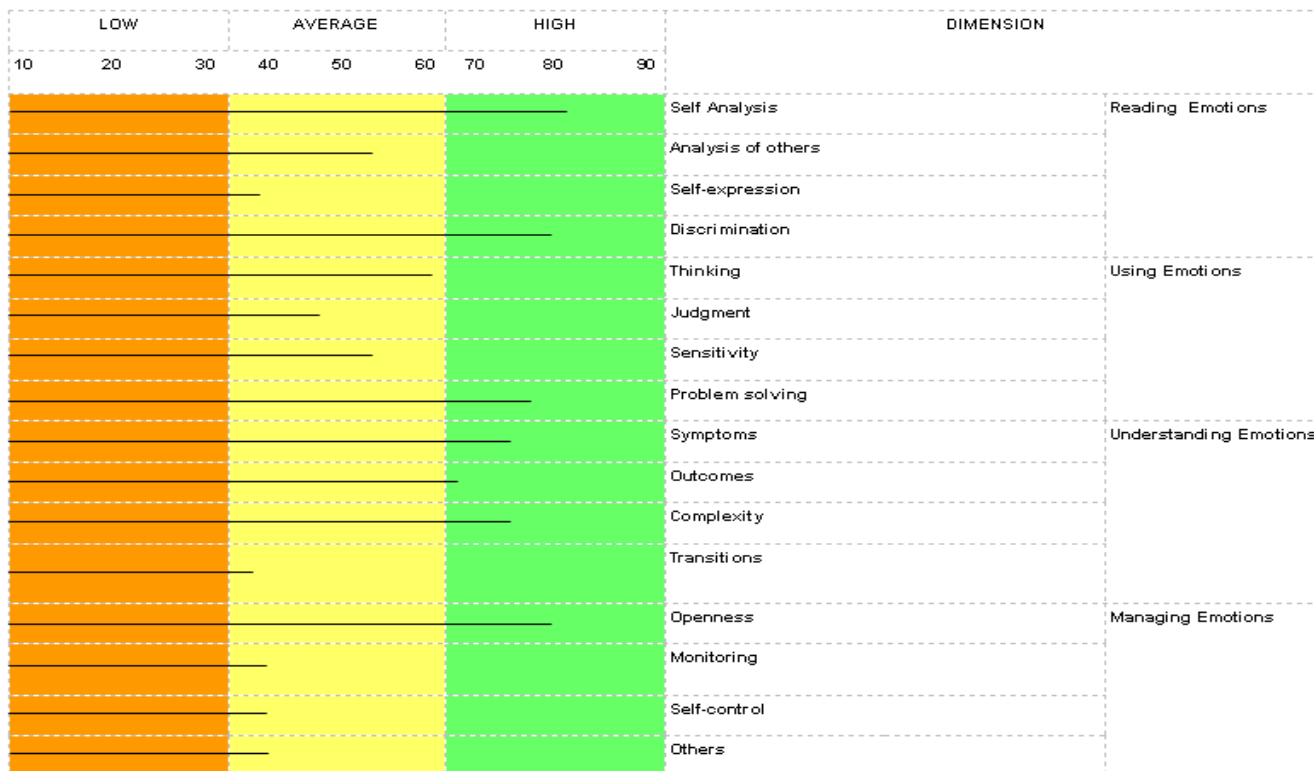


Figure 1. The emotional intelligence questionnaire (EIQ₁₆)

Managing emotions

Your emotions and other's emotions are sources of information that, along with rational and logical information, can help you make well-informed decisions. This cluster of abilities is about staying alert to your own and other people's instincts, gut feelings and mood swings. It also covers the ability to manage your own and other's feelings and emotions in pressurized and stressful situations in order to maximize your own and other's performance. A skillful manager connects with themselves and with other people. He or she knows how to psych themselves and other people up or down appropriately for the situation.

Data analysis

Student's t-test for independent data was used to assess the between-group differences. The level of $p \leq 0.05$ was considered significant.

RESULTS

The results pertaining to significant difference, if any, between open and closed-skill athletes were assessed using the Student's t test and the results are presented in Table 1. Table 1 revealed that there were significant differences of self-analysis ($p = 0.0004$), analysis of others ($p = 0.0137$), self-expression ($p = 0.0274$), thinking ($p = 0.0189$), judgment ($p = 0.0010$), problem solving ($p = .0310$), complexity ($p = 0.0036$), transitions ($p = 0.0013$), openness ($p = 0.0061$), self-control ($p = 0.0562$) and

others ($p = 0.0490$) among open-skill and closed-skill athletes, since the tabulated value of $t = 2.09$ for 19° of freedom is smaller than required values of t , that is, self-analysis ($t = 4.251^*$), analysis of others ($t = 2.716^*$), self-expression ($t = 2.390^*$), thinking ($t = 2.567^*$), judgment ($t = 3.873^*$), problem solving ($t = 2.331^*$), complexity ($t = 3.318^*$), transitions ($t = 3.784^*$), openness ($t = 3.085^*$), self-control ($t = 2.033^*$) and others ($t = 2.103^*$) whereas no significant difference was found in discrimination ($p = 0.1789$), sensitivity ($p = 0.0761$), symptoms ($p = 0.2617$), outcomes ($p = 0.0770$) and monitoring ($p = 0.2258$) among open-skill and closed-skill athletes, since the tabulated value of $t=2.09$ for 19° of freedom is greater than required values of t , that is, discrimination ($t = 1.396$), sensitivity ($t = 1.876$), symptoms ($t = 1.157$), outcomes ($t = 1.870$) and monitoring ($t = 1.252$). Mean, standard deviation and standard error of the mean of open and closed skill athletes of emotional intelligence dimensions is exhibited in Figure 3.

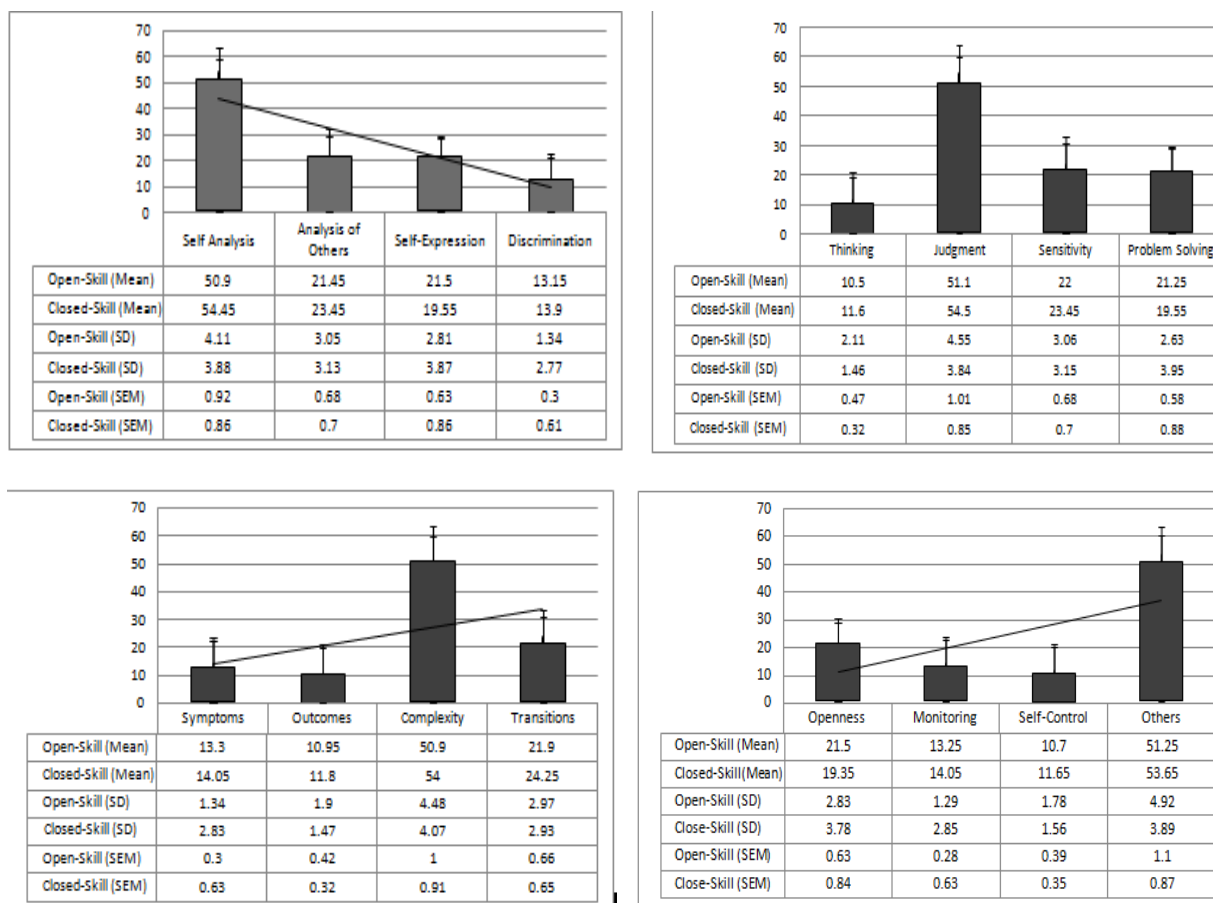
DISCUSSION

Emotional intelligence (EI) has been reported to be more realistic than other measures in evaluating performances in many fields of human activities (Ajayi et al., 2008). However, research evidences reveal that its application to amateur athletes and its possible effectiveness in enhancing sports performances is yet unknown (Ajayi et

Table 1. Mean standard deviation, standard error of the mean, t-value and p-value of open and closed skill athletes.

Dimensions	Mean		SD		SEM		t-value	p-value
	Open-skill	Closed-skill	Open-skill	Closed-skill	Open-skill	Closed-skill		
Self-analysis	50.90	54.45	4.11	3.88	0.92	0.86	4.251*	0.0004
Analysis of others	21.45	23.45	3.05	3.13	0.68	0.70	2.716*	0.0137
Self-expression	21.50	19.55	2.81	3.87	0.63	0.86	2.390*	0.0274
Discrimination	13.15	13.90	1.34	2.77	0.30	0.61	1.396	0.1789
Thinking	10.50	11.60	2.11	1.46	0.47	0.32	2.567*	0.0189
Judgment	51.10	54.50	4.55	3.84	1.01	0.85	3.873*	0.0010
Sensitivity	22.00	23.45	3.06	3.15	0.68	0.70	1.876	0.0761
Problem solving	21.25	19.55	2.63	3.95	0.58	0.88	2.331*	0.0310
Symptoms	13.30	14.05	1.34	2.83	0.30	0.63	1.157	0.2617
Outcomes	10.95	11.80	1.90	1.47	0.42	0.32	1.870	0.0770
Complexity	50.90	54.00	4.48	4.07	1.00	0.91	3.318*	0.0036
Transitions	21.90	24.25	2.97	2.93	0.66	0.65	3.784*	0.0013
Openness	21.50	19.35	2.83	3.78	0.63	0.84	3.085*	0.0061
Monitoring	13.25	14.05	1.29	2.85	0.28	0.63	1.252	0.2258
Self-control	10.70	11.65	1.78	1.56	0.39	0.35	2.033*	0.0562
Others	51.25	53.65	4.92	3.89	1.10	0.87	2.103*	0.0490

*Significant at 0.05 level; critical values of the t-distribution $t_{0.05} (19) = 2.09$.

**Figure 2.** Mean standard deviation and standard error of the mean of open and closed skill athletes of emotional intelligence dimensions.

al., 2008). This study therefore investigated the difference of emotional intelligence among open- and closed- skill athletes. The results revealed significant difference in self-analysis ($p = 0.0004$), analysis of others ($p = 0.0137$), self-expression ($p = 0.0274$), thinking ($p = 0.0189$), judgment ($p = 0.0010$), problem solving ($p = 0.0310$), complexity ($p = 0.0036$), transitions ($p = 0.0013$), openness ($p = 0.0061$), self-control ($p = 0.0562$) and others ($p = 0.0490$) among open- and closed- skill athletes. This suggests that there is a difference of self-analysis, analysis of others, self-expression, thinking, judgment, problem solving, complexity, transitions, openness, self-control and others among open-skill and closed-skill athletes. Results further revealed no significant difference in discrimination ($p = 0.1789$), sensitivity ($p = 0.0761$), symptoms ($p = 0.2617$), outcomes ($p = 0.0770$) and monitoring ($p = 0.2258$). This suggests that there is no difference of discrimination, sensitivity, symptoms, outcomes and monitoring among open-skill and closed-skill athletes. These findings substantiate the assertion of Hanin (2000) that emotions can fluctuate between performers and performers can experience both positive and negative emotions (Hanin, 1997; Jones, 2003). In reviewing emotions and their impact on sports performance, Botterill and Brown (2002) contend that athletes should critically reflect on their own emotional experiences. Hanin (2000) suggests participants need to develop skills in order to recognize and manage their emotions. It could be argued that the evidence presented earlier closely aligns with the construct of emotional intelligence. Considering that the construct of emotional intelligence is defined as the ability to perceive, monitor, employ, and manage emotions, it is necessary to assess the relationship between emotional intelligence and the regulation of emotion(s). Indeed, research has found that emotional regulation can lead to optimal performance states (Totterdell and Leach, 2001). Thus, it comes as no surprise that researchers have begun to explore the utility of emotional intelligence in sport (Meyer et al., 2003; Meyer and Fletcher, 2007; Meyer and Zizzi, 2007; Zizzi et al., 2003). In conclusion, emotional intelligence is an important construct in the sports domain (Meyer and

Fletcher, 2007). Accordingly, interest in emotional intelligence has increased specifically in the realm of athletics (Zizzi et al., 2003). Proponents have claimed that emotional intelligence can enhance leadership performance, team cohesion, and coping with pressure.

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