

Emotional quotient in the structure of mental burnout of athletes

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Abstract:

The study presents a correlation analysis of factors and theoretical arguments of the established empirical facts that make up the content of emotional (intelligence) quotient of athletes ($n = 125$). **The purpose** is an empirical study of emotional quotient in the structure of mental burnout of athletes at the stage of preparation and participation in competitions; establishing the interconnection of psychological content parameters of emotional quotient with personal qualities and levels of emotional burnout. **Research methods:** correlation analysis, valid and reliable test methods with standardized questionnaires. **Results.** An empirical study of the role of emotional quotient in the emergence and reduction of mental burnout of athletes has shown a number of features. It is noted that the psychological semantic parameters of emotional quotient combined the emotional, cognitive and motivational components of the individual. Athletes with higher emotional quotient have been found to have realistic self-esteem, optimal levels of personal anxiety, an internal locus of control, and constructive motivation. It is demonstrated that the less athletes understand their own feelings, the worse they perceive other people's emotions, and the more often they are exposed to mental burnout. A negative correlation was found between emotional exhaustion and the level of empathy ($r = -.210$; $p < .05$) and emotional awareness ($r = -.187$; $p < .05$). It is proved that the better developed empathy and awareness of emotions (own and others), the lower the level of mental burnout. Significant differences were established between male and female athletes in terms of "Empathy" ($p \leq .01$), "Managing one's own emotions" ($p \leq .01$) and "Recognizing other people's emotions" ($p \leq .01$). It was found that a high level of self-esteem and the level of pretension, the absence of contradictions between them contributes to the development of athletes' self-confidence. **Conclusions.** It is grounded that men are better at controlling their own emotions, and women have a higher level of empathy. Understanding the essence of emotional quotient and mental burnout determines the solution of problems of athletes' professional training.

Key words: empathy, self-motivation, training, sports competitions, emotional state.

Introduction

Daily involvement of athletes in training and competitive processes, extremely high physical and psycho-emotional loads contribute to the accumulation of physical and psychological fatigue (Cheban et al., 2020a; Strykalenko et al., 2019; 2020a). Uncertainty of competitive conditions, lack of sense of control, high probability of injury can act as stressors for athletes. Lack of attention to the emotional side of the athlete's life, a negative attitude to the expression of his / her feelings and emotions, implanting stereotypical values, leads to the emergence of borderline mental states, especially emotional. And with pessimistic prognostication, all this leads to an increase in somatomorphic, emotional, anxiety disorders.

The further activity of the athlete and, especially its result, will depend on his / her awareness of his / her emotional state. Coaches, psychologists who work with highly qualified athletes, seek to form in them an emotional culture to understand their own emotions and the ability to manage them. On the one hand, lower – skilled athletes find it harder to develop such skills due to the frivolity of this problem. On the other hand, such skills are more difficult to develop due to the financial cost of attracting professionals who could work with them individually in this regard.

All this, of course, led to the interest of researchers in the field of human emotional culture and the peculiarities of its development. Understanding one's own emotional states actualizes the appeal to understanding the role of the cognitive component in the mental activity of the athlete. One such component is emotional quotient. This is a multifactorial phenomenon that testifies primarily to the general awareness of the world of emotions and feelings. However, its most important function is to help people understand their own emotional state and the condition of others, as well as to ensure the ability to control their emotions (Salovey &

Mayer, 1990). The authors believe that the proper development of athletes' emotional quotient will reduce the risk of their mental stress and, most importantly, reduce the risk of mental burnout. This actualizes the study of emotional quotient in the structure of mental burnout of athletes.

Mental burnout in athletes is determined by a wide range of processes and events. First of all, it is emotional / physical exhaustion, decreased sense of achievement and devaluation of achievements (Raedeke, 1997). This process also depends on the motivational component (Lozhkin & Volianiyuk, 2004; Raedeke & Smith, 2001). This process is also provoked by a low level of control over events (Gould et al., 1996; Raedeke, 1997). The authors of the publication see the main cause of mental burnout in the professional activities of athletes. It is in professional activity that the personal qualities of the subject of activity and social events are combined. We believe that the proper level of emotional quotient development would reduce the influence of these factors and increase the psychological stability of the athlete.

Persistent personal qualities, namely: low personal anxiety, positive motivation to succeed, internal locus of control, adequate balance of self - esteem and pretension, will help reduce mental burnout in athletes during training and competition. It is important to take into account emotional awareness, the ability to control their own emotions, self-motivation, empathy, the ability to recognize the emotions of others, which collectively characterize the emotional quotient of the athlete. Low level of athletes' emotional quotient can be a source of stress, mental overload, and hence mental burnout. Given the above considerations, the study of emotional quotient as a factor in the emergence or reduction of mental burnout is relevant and necessary.

Hypothesis. We believe that the formed emotional quotient together with a number of personal qualities will help athletes to overcome the critical peak emotional load in various situations of training, competitive sports activities and contribute to the constructive overcoming of mental burnout.

The purpose is an empirical study of emotional quotient in the structure of athletes' mental burnout at the stage of preparation and participation in competitions; establishing the correlation of psychological semantic parameters of emotional quotient with personal qualities and levels of emotional burnout.

Material and methods

Methodology. The methodological principles of our experimental study with the ascertaining measurement of psychological semantic parameters of emotional quotient are a set of successive measures, which tested a number of methods in research of psychology and pedagogy of sports (Blynova et al., 2020; Kobets et al., 2021a; 2021b; Kozina et al., 2019; Marques et al., 2011; Shalar et al., 2019; Strykalenko et al., 2020b; 2021). In particular, the proposed study is based on methodological principles concerning the determinants of adaptability (Blynova et al., 2019; Halian et al., 2020), stress resistance of respondents (Cheban et al., Hudimova, 2021; Hudimova, et al., 2021; 2020b; Ivanchenko, 2020; Popovych et al., 2021d) and personality self-regulation (Blynova & Kruglov, 2019; Popovych et al., 2021a).

The applied methodology has been tested in the study of mental and emotional burnout (Burke & Greenglass, 1989; Raedeke & Smith, 2001; Gustafsson, 2007; Fawcett, 2008), in determining the role of emotional quotient in human life (Goleman, 2006; Bar-On et al., 2007; Baudry et al., 2018; Bradberry & Greaves, 2009; Laborde et al., 2016; Karpenko, 2020), responsibility of athletes (Halian, 2019), self-efficiency of future athletes (Popovych et al., 2020c; 2021c; 2021f), motivation of professional development of a specialist (Halian, 2018; Popovych et al., 2019a; 2021g), resource approach to stress management (Bodrov, 2000; Halian et al., 2020), as well as in studies of mental states of expectations in sports activities (Cheban et al., 2020c; Popovych et al., 2019b; 2020a; 2020b; 2021b; 2021e), educational and professional (Popovych & Blynova, 2019a; 2019b; Prontenko et al., 2019) and other activities related to sports in the presence of critical conditions and excessive physical and emotional stress (Ivanchenko et al., 2020; Mamenko et al., 2022; Nosov et al., 2020a; 2020b; 2021a; 2021b; Popovych et al., 2019c; Zinchenko et al., 2020; 2021; 2022).

The analyzed empirical studies contributed to the creation of methodology, selection of relevant psychodiagnostic methods, as they contained significant research results on adaptation, burnout, emotions, motivation, regulation, stress resistance of respondents.

We state that the task is relevant and it is performed by methods of correlation analysis and theoretical substantiation of established empirical facts. The set of methods provided the definition of the characteristics (variables) that formed the structure of the studied phenomena. Correlation analysis allowed establishing the interconnection between the variables of the subject. This logic has been confirmed, as we have proved, that the development of mental burnout in athletes correlates with the level of emotional quotient.

Participants. The study involved athletes of individual and team sports of different skill levels (qualifications) (n = 125). The sample consisted of athletes whose competitive activity during the progression of the COVID-19 pandemic caused by the SARS-CoV-2 virus (quarantine has been officially introduced in Ukraine since March 12, 2020) decreased significantly. The main reason for the decrease was the official restriction and cancellation of sporting events due to the progression of the COVID-19 pandemic. The age limits of the subjects are from 15 to 23 years. The average age of respondents was 19.2 years. Women accounted for 40.8% (n = 51)

and men for 59.2% (n = 74). The experience of training and competitive activities in sports ranged from 8 to 23 years.

Procedures and instruments. The key is the method of studying emotional quotient, authored by N. Hall “EQ questionnaire” (Hall, 2000). The diagnostic construct of the method is five scales: “Emotional awareness” (the ability to distinguish and interpret their own moods, emotions, impulses, as well as their impact on other people); “Manage your own emotions” (ability to control and direct own impulses); “Self-motivation” (inner passion for work); “Empathy” (the ability to understand the emotional state of others and interact with them based on their emotional reactions); “Recognize other people’s emotions” (the ability to find common ground and maintain relationships with people). The method collectively helps to establish the ability to understand the attitudes of individuals represented in emotions and the management of the emotional sphere on the basis of decision-making. The α -Cronbach index was set to $\alpha_{EQ}=.813$.

Respondents’ mental burnout parameters were set by the “Athlete Burnout Questionnaire” (ABQ) (Raedeke & Smith, 2001). The questionnaire was adapted by E. Grin (2007). We used three scales: “Decreased sense of achievement”, “Emotional / physical exhaustion”, “Depreciation of achievements”. According to this method, the α -Cronbach’s index was established, which was $\alpha_{ABQ}=.763$.

From the rest of the applied methods, only those scales were selected that were relevant in the context of our study.

To diagnose the level of athletes’ personal anxiety, the method of C. Spielberger (1983) “Scale of personal anxiety”, adapted by Yu. Hanin (2001), was applied. One scale of this method is used – “Personal anxiety”. The “Level of Subject Control” questionnaire was used (Bazhin et al., 1984). In the context of our study, three scales were used: “General internality” (GI), “Internality in the sphere of achievements” (IA) and “Internality in the sphere of failures” (IF). Respondents’ self-esteem, the level of pretension and the difference between self-esteem and the level of pretension were established according to the Dembo-Rubinstein method “Self-assessment study”, according to a modified version of A. M. Prikhozhan (2007). Two scales “Motivation to succeed” and “Motivation to avoid failures” were used according to the psychodiagnostic method of T. Elers “Motivation to succeed and avoid failures” (Golovey & Rybalko, 2002). According to this method, the α -Cronbach index was $\alpha = .753$. Cronbach’s alpha parameters set by psychodiagnostic methods range from a sufficient level (.7) to a high level (.9).

Organization of Research. During 2020, after the official cancellation of a number of sports events, a statement (an ascertaining testing) was made, which determined the studied psychological parameters. The ascertaining experiment formed the basis of empirical research. Manifestations of emotional quotient and mental burnout in respondents of the sample were established. The personal qualities of the athletes were diagnosed. The magnitude of the manifestation of these qualities can contribute to mental burnout. The sincerity and non-randomness of the answers was ensured by the voluntary participation of the subjects in the experiment and the confidentiality of the results. The obtained results were interpreted separately for each method, after which a search was made for a causal connection between psychological semantic parameters.

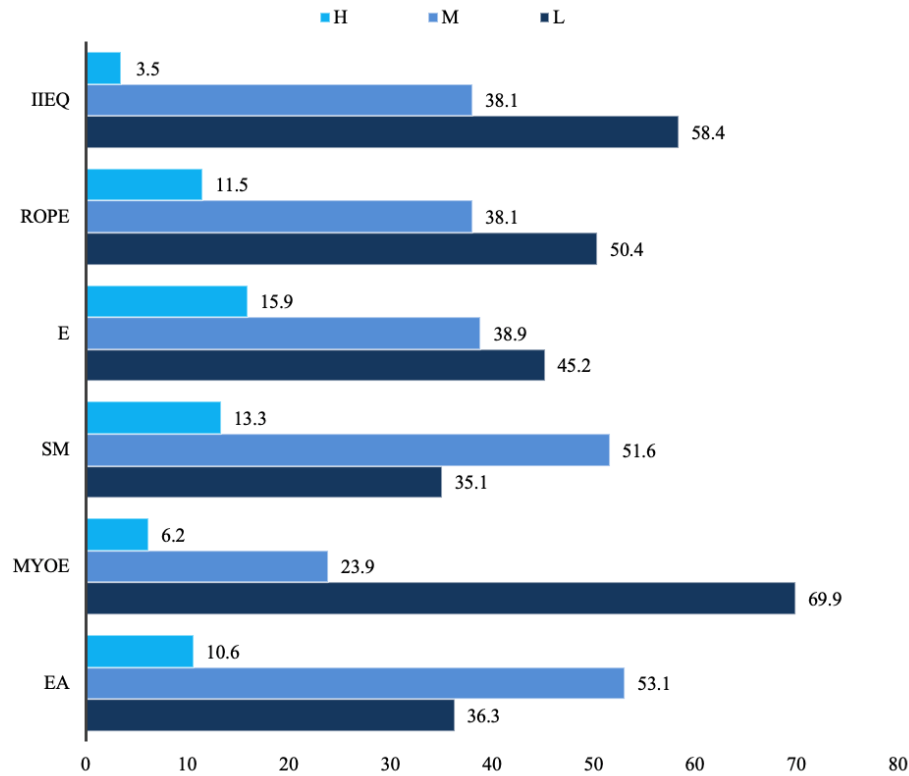
Statistical Analysis. Statistical processing of empirical data and graphical presentation of results was performed using statistical programs “SPSS” v. 26.0 and “MS Excel”. The Pearson’s correlation coefficient and Student’s t-test were used to determine the significance of the interconnection.

Results

Daily involvement of athletes in the training and competitive process can cause mental and physical overload. Uncertainty of competitive conditions, lack of sense of control of the situation, a high probability of injury can be stressors for athletes. Therefore, awareness of one’s emotional state is actualized in sports. The cognitive expression of such awareness is emotional quotient. The correlation of the levels of manifestation of the components of athletes’ emotional quotient has been established in Fig. I.

Emotional quotient indicators are mainly in the range of medium and low values. In 15.9% of the subjects a high level of manifestation was stated on the scale “Empathy”, and in 13.3% on the scale “Self-motivation”. 69.9% of respondents find it difficult to cope with their own emotions. However, in total (the sum of indicators of medium and high level) there is a sufficient manifestation of the components of emotional quotient on such scales as: “Self-motivation”, “Emotional awareness” and “Empathy”.

The scales “Recognize other people’s emotions”, “Manage your own emotions” and “Integral indicator of emotional quotient” are dominated by low values. Therefore, it can be stated that athletes do not pay enough attention to their own emotional state, which can be a source of mental overload.



Note: H – high; M – medium; L – low; IIEQ – Integral indicator of emotional quotient; ROPE – Recognize other people’s emotions; E – Empathy; SM – Self-motivation; MYOE – Manage your own emotions; EA – Emotional awareness.

Figure 1. The correlation of the levels of manifestation of the components of athletes’ emotional quotient

There are significant differences between male and female athletes in terms of “Empathy”, “Management of their own emotions” and “Recognition of other people’s emotions” (Tabl. 1).

Table 1. Frequency of manifestations of emotional quotient (EQ) of different levels in athletes (n = 125)

Emotional Quotient scales	Primary statistics of EQ indicators				Student’s t-test	
	Men (n = 74)		Women (n = 51)		t	P
	M	SD	M	SD		
Emotional awareness	7.45	2.09	8.85	1.98	1.9	
Manage your own emotions	5.8	2.02	2.1	1.02	7.4	p≤.01
Self-motivation	8.9	2.22	7.75	1.86	1.8	
Empathy	5.4	2.48	9.1	2.05	5.2	p≤.01
Recognize other people’s emotions	5.95	2.70	8.15	2.32	2.8	p≤.01
Integral indicator of emotional quotient	36.9	7.43	35.5	1.98	.6	

Note: M – arithmetic mean; SD – mean square deviation.

Men are diagnosed with better management of their emotions. In addition, they are more focused than women on their athletic responsibilities. It has been shown that women tend to experience emotions more emotionally than to control them. It has been shown that women tend to experience emotions more than to control them. The authors attribute the highest rate of empathy in women to their compassion and empathy.

Negative statistically significant correlations were established between some indicators of mental burnout and emotional quotient (Tabl. 2).

Table 2. Correlation coefficients between indicators of emotional quotient and mental burnout of athletes

Indicators of mental burnout	Indicators of emotional quotient					
	EA	MYOE	SM	E	ROPE	IIEQ
Decreased sense of achievement	-.104	.121	.112	.118	.141	.101
Emotional / physical exhaustion	-.187*	-.136	-.117	-.210*	-.118	-.145
Depreciation of achievements	-.148	-.064	-.084	-.147	.111	-.017
Integral indicator of mental burnout	-.141	-.061	-.10	.226*	.128	-.114

Note: EA – Emotional awareness; MYOE – Manage your own emotions; SM – Self-motivation; E – Empathy; ROPE – Recognize other people’s emotions; IIEQ – Integral indicator of emotional quotient; * –significance is reliable at the level $p<.05$; ** –significance is reliable at the level $p<.01$.

The correlation results of personal qualities of athletes and features of their emotional quotient are received (Tabl. 3).

Table 3. Correlation coefficients between emotional quotient and personal qualities of athletes (n = 125)

Personal qualities of athletes	Indicators of emotional quotient					
	EA	MYOE	SM	E	ROPE	IIEQ
Personal anxiety	-.071	-.139**	-.185*	.013	-.061	-.210*
Motivation to succeed	.238**	-.062	.241**	.242**	.239**	.349**
Motivation to avoid failure	.011	-.040	-.176	.068	.088	.01
Self-esteem	.233**	.062	.249*	.234**	.176*	.401**
The level of pretension	-.051	.013	.238**	-.056	-.067	.03
The difference between self-esteem and the level of pretension	-.249**	-.102	-.071	-.237**	-.235**	-.345**
General internality	.234**	.085	.186*	.153**	.199*	.392**
Internality in the sphere of failures	.221*	.091	.163	.267**	.184*	.234**
Internality in the sphere of achievements	.226*	.074	.231**	.183*	.142	.301**

Note: EA – Emotional awareness; MYOE – Manage your own emotions; SM – Self-motivation; E – Empathy; ROPE – Recognize other people’s emotions; IIEQ – Integral indicator of emotional quotient; * – significance is reliable at the level $p<.05$; ** –significance is reliable at the level $p<.01$.

The authors believe that a higher level of emotional quotient is likely in athletes with moderate anxiety, high motivation to succeed, high general internality, as well as internality in the sphere of achievements and failures. The development of emotional quotient is facilitated by athletes’ self-confidence, which is determined by a high level of self-esteem and the level of pretension, as well as insignificant differences between self-esteem and the level of pretension.

Discussion

The presence of different views on the structure and origin of emotional quotient led to the emergence of its various concepts and models. Thus, in the model P. Salovey and J. Mayer, emotional quotient is presented as a person's cognitive ability (Salovey & Mayer, 1990). In the concept of D. Goleman (2006) and R. Bar-On et al. (2007) emotional quotient is seen not only as a cognitive ability but also as a personal property. D. Lyusin (2004) differentiates emotional quotient as intrapersonal (self-knowledge) and interpersonal (understanding others) (Lyusin, 2004). That is, it is a construct that contains both cognitive abilities and personal characteristics. We believe that it is mixed models, explaining emotional quotient as a set of cognitive abilities and personal characteristics, most fully reveal its essence. It includes a complex psychosocial ability of a person – emotional competence.

Emotional quotient today needs more thorough research. Thus, it is obvious that emotional intelligence is not only one of the regulators of the emotional state of a person, but also an essential prerequisite for the prevention of mental burnout and the choice of certain strategies to overcome stress (Grin, 2007). Our results state a statistically significant interconnection between the indicators of “Mental burnout” and “Emotional quotient”. In particular, the connection “Emotional / Physical exhaustion” and “Emotional awareness” ($r = -.187$; $p<.05$), “Empathy” ($r = -.210$; $p<.05$), “Integral indicator of mental burnout” and “Empathy” ($r = -.226$; $p<.05$) (see Tabl. 2) show that the tendency to mental burnout is determined by the weak awareness of athletes about their feelings and inadequate perception of other people’s emotions. The connection between recognizing one’s own emotions and the emotions of others is discussed in a study by H. Elfenbein and C. MacCann (2017).

Researchers emphasize the lack of statistically significant correlations between the expression and perception of one’s own emotions, and the existence of links between the recognition of one's own emotions and the emotions of others (Elfenbein & MacCann, 2017). This is consistent with research by E. Grin (2008) that the better male and female athletes recognize the emotions of others and their own, the lower the likelihood of emotional burnout (Grin, 2008). And the stronger the mental burnout, the higher the probability that athletes will avoid solving problems. The buffering role of emotional quotient in other processes of human life has been confirmed by studies of D. Gutierrez, C. Butts, K. Lamberson and P. Lassiter (2019).

Highly qualified athletes, constantly being selected for elite teams and prestigious competitions, constantly prove their importance in sports. Rating variations in the team are (for the athlete) an essential regulator of the mental tension level and a factor in the mental burnout development. Some other features and conditions of high-class athletes' activity are added to this (Gorskaya, 2008). In such circumstances, the issues of personal qualities of athletes become relevant. Given the results obtained (see Table 3), the authors suggest that a high level of

emotional quotient is most likely inherent in athletes with medium level of anxiety, high motivation to succeed, high general internality and internality in the sphere of achievements and failures. The development of emotional quotient is also facilitated by athletes' self-confidence, which is determined by a high level of self-esteem and the level of pretension, as well as a small difference between self-esteem and the level of pretension.

The correlation between the indicators of emotional quotient, personal qualities and indicators of mental burnout stated in the study allows us to consider emotional quotient as an important resource for overcoming mental burnout. Its insufficient involvement is a consequence of the lack of attention to the emotional competence of athletes by professionals who accompany their training, or a narrow understanding of it. This comes down to athletes having certain skills to regulate the level of emotional tension. It is shown that the higher the indicators of emotional quotient, in particular, emotional awareness of their own emotions and feelings of others and empathy, the lower the likelihood of mental burnout. We believe that purposeful influence through training will help athletes understand this interconnection and develop a desire to control their own emotional state.

Conclusions

1. The ability of an individual to perceive his / her own and others' emotions, to convey thoughts related to emotions, to see the world from another's point of view and to develop emotional connections with others forms a complex psychosocial ability – emotional competence, referred to as emotional quotient. The content of emotional quotient determines the interaction of emotional, cognitive, conative and motivational features of personality. Emotional quotient is the ability of conscious intellectual control of one's own affects for the successful organization of interpersonal interaction and personal professional development.

2. The study of the role of emotional quotient in the emergence and reduction of mental burnout in athletes has shown a number of features. Athletes with higher emotional quotient have realistic self-esteem, optimal levels of personal anxiety, internal locus of control and constructive motivation. It is revealed that the less athletes understand their own feelings, the worse they perceive other people's emotions, and the more often they are exposed to mental burnout.

3. Significant differences were noted between male and female athletes in terms of "Empathy" ($p \leq .01$), "Managing your own emotions" ($p \leq .01$) and "Recognizing other people's emotions" ($p \leq .01$). Men are better at controlling their emotions, and women are more empathetic. A high level of self-esteem and the level of pretension, the absence of contradictions between them contributes to the development of athletes' self-confidence.

4. We claim that the results of the study of the role of emotional quotient in the athletes' mental burnout of different sports and qualifications provide solutions to the problems of professional training of athletes. The application of the research results will contribute to the effective organization of the preparatory process of athletes for competitions.

5. The issue of the possibility of mental burnout prevention through the development of psychological culture of athletes by means of psychological support of their preparation for competitions remains open.

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