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Psychology of Personality: Real and Virtual Context

ASSOCIATION BETWEEN ATHLETES SELF-EFFICACY, EMOTIONAL REGULATION AND SPORTS ACHIEVEMENTS

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Abstract

Psychological factors are one of the most important to an athlete's performance and achievements. Among all psychological features the emotion and emotional regulation play the essential role especially for competitive athletes. The most applicable to sport studies model of motivation includes intrinsic, extrinsic motivation and amotivation. However, according to some previous studies the self-efficacy is the key to sport success. Athletes' self-efficacy is the belief to perform actions and behavioral patterns necessary to achieve the expected results. That's why the study is aimed to reveal the association between self-efficacy to regular exercises, emotional regulation, and motivation. Internal, External, Amotivation, and Cognitive reappraisal and Expressive suppression were evaluated on the sample of 176 athletes (M age = 18.16 years; 38% female). The descriptive statistics, Pearson correlation coefficients, and hierarchical linear regression models were used for data analysis. The main findings are 1) athletes with high levels of self-efficacy are less demotivated and more likely to use a Cognitive reappraisal strategy; 2) younger age athletes with higher self-efficacy are more motivated to achievements; 3) athletes with high motivation are more flexible in emotional regulation, and less suffer from the competition failures. Further research is needed to examine the relationships of self-efficacy to regular exercises, emotional control, and motivation among different groups of athletes and athletes with different sports ranks.

Keywords: Achievements, emotion regulation, motivation, self-efficacy to regulate exercises, sport self-efficacy.

1. Introduction

The effectiveness of an athlete depends on many factors. Both competitive and training activities are determined by the athlete's idea of their abilities by his/her motivation and ability to regulate their own's emotions. It is important to study the relationship between these indicators and sports performance and, more importantly, the mediating effects that can play a determining role in this relationship.

2. Problem Statement

2.1. Self-efficacy and achievements in sport

The idea of self-efficacy is one of the most developed concepts in sport. Self-efficacy is the most accurate predictor of performance and success in sport and concerns the athletes' belief in the ability to perform algorithms of action and implement behavioral patterns necessary to achieve the expected results. Some studies demonstrate the connection between self-efficacy and sports achievement (Moritz et al., 2000). For example, for the rock climbers, self-efficacy is a factor that determines the frequency and complexity of climbing (Llewellyn et al., 2008). Self-efficacy is often considered in terms of group (team) goals (Gully et al., 2002) and individual goal-setting. A distinctive feature of the consideration of self-efficacy in individual sports is the consideration of self-efficacy in the dyad coach-sportsman (Lafrenière et al., 2011), in particular the cumulative effect of the coach's management style on the athlete's basic psychological needs (Trigueros et al., 2019). While there is a significant volume of evidence in the field of research on self-efficacy in sport, research often focuses on finding sources of self-efficacy, which include the experience, imagery, physical, and emotional well-being of athletes (Ross-Stewart & Short, 2009).

2.2. Emotional regulation

Associations of self-efficacy with positive emotional reactions are reflected in many works (Tritter et al., 2013; Welch et al., 2010). Emotions are complex multi-component features that involve an internal process and the expression of a particular affective state that the athlete demonstrates, such as anger from a missed shot in soccer. It should be noted that the regulation of emotions is an essential construction in sports competitions (Lane et al., 2011). The fundamental theoretical model is the process model of emotion regulation and strategies available to athletes, Gross and Thompson (Gross, 1998; Gross & Thompson, 2007). According to this model, emotional regulation is described as a series of five strategies that reflect the stages of the emotional response unfolded over time: 1) Situation selection; 2) Situation modification; 3) Attentional deployment; 4) Cognitive change; 5) Response modulation.

These strategies focus on the aspects of experience before the emotional response, describe the forms of regulation that focus on experience (Moore & Marin, 2019). This model is based on the concept of the process of generating emotions, according to which emotions begin with the evaluation of emotional signals (Pankratova, 2014). There are two ways for emotional response: antecedent-focused emotion regulation and response-focused emotion regulation. The questionnaire, which is used to determine emotional regulation, is based on two strategies for emotional regulation: cognitive reappraisal and expressive suppression. Cognitive reappraisal is a change of attitude to a situation, and expressive suppression is the deterrence of external manifestations of an already emerging emotional response.

2.3. Motivation in sport

Emotions are directly related to the motivation of athletes (Fairholme et al., 2010). When we talk about motivation, which is a catalyst, and an incentive, we most often talk about the connection to the achievements of our goals. Many theories of motivation (cognitive, social theories, etc.), as well as many classifications of motives, do not have a common opinion on what is crucial for successful activity. The most popular idea is the categorization according to the source of deterministic behavior - external and internal motivations arising from external sources (such as various forms of social reward - approval, praise) or internal (personal need for success, recognition), as well as due to the specificity of the motor task itself (qualities as novelty, technical or physical complexity of the exercise) (Akimova, 2004). An attractive model of sports motivation developed by a Canadian group of scientists headed by Vallerand (Vallerand et al., 1989), which includes three types of 1) intrinsic motivation (intrinsic motivation to accomplish things, intrinsic motivation to know and intrinsic motivation to experience stimulation); 2) extrinsic motivation (identified regulation, introjected regulation and external regulation) proposed by Deci and Ryan (1985, 1991)., 3) and amotivation. Intrinsic motivation is formed under the influence of one's aspirations and needs, supported by emotional experiences. It is categorized as the performance of an activity for pleasure and satisfaction obtained from the performance of that activity, without any external reward (Deci & Ryan, 1985). Extrinsic motivation, on the other hand, is supported by the assessments of others and is aimed at achieving results (Deci & Ryan, 1985). Task-oriented athletes try to outperform their results and are more persistent, able to manage negative emotions in the event of failure, and are more motivated by their nature (Duda & Hall, 2001).

3. Research Questions

The research questions for this study were:

1. What is the relationship between self-efficacy to regular exercises, motivation and type of emotional regulation?

2. Are the motivation and emotional regulation significantly predict athlete's self-efficacy?

3. Are the motivation and emotional regulation significantly predicting athlete's self-efficacy?

4. Purpose of the Study

The main purpose of this study was aimed at studying the psychological factors of achievement in sports.

5. Research Methods

5.1. Participants and Procedure

The study was attended by 176 athletes, the age range: 16-23 years, 68 men (M age = 18.16 years) and 108 women (16-20 years, M age = 17.73), who perform and live in Russia. All participants filled out an SMS, Emotion Regulation Questionnaire (ERQ) and self-efficacy to regulate exercises scale. In order to

measure athletes' sport achievements, questions concerning sport experience, competitive experience, and their highest achievement in sport were asked.

5.2. Measures

Sport Motivation Scale (SMS) (Pelletier et al., 1995) is a 28-point scale designed to assess an athlete's motivation. This scale evaluates three components of motivation: intrinsic, extrinsic motivation and amotivation. Internal motivation through intrinsic motivation "to know", "to accomplish" and "to experience". Extrinsic motivation describes different types: Introjected regulation of behaviour, regulation through identification, externally regulated behaviour. The responses were scored on a seven-point scale from 1 (very few) to 7 (very many).

Emotion Regulation Questionnaire (ERQ) (Gross, 2013; Pankratova, 2014) is aimed at diagnosing two strategies of emotional regulation - cognitive reappraisal and expressive suppression. The ERQ consists of 10 items and the responses are rated on a scale from 1 (strongly disagree) to 7 (fully agree).

Self-efficacy to regulate exercises Scale (Bandura, 2006) consists of 18 items and measures sport self-efficacy, i.e. an idea of own abilities. The answers were evaluated on a five-point scale from 1 (Cannot do at all) to 5 (Highly certain can do). This scale was developed on the basis of a theoretical model of self-efficacy and questionnaires related to the measure of specific self-efficacy to regulate exercises (Bandura, 1997).

Statistical analyses

Data analysis was carried out using the SPSS statistic 20. The descriptive statistics, Pearson correlation coefficients, and hierarchical linear regression models were calculated.

6. Findings

The characteristics of the athletes included in our analysis report are described in Table 1.

The athletes participating in the study did not differ significantly in age. The majority of the athletes recruited for the survey were women (over 60%), with an average age of 17 years. Most of the participants had experience performing at various sports competitions. Levels of sports rank varied from Third-Class Junior Sportsman to Merited Master of Sport (an international champion who has made valuable contributions to the sport). Eighty-eight athletes took part in competitions with high ratings and had extensive sports experience, 17% of them were elite athletes. 77% of them were individual sportsmen.

Table 01. Basic characteristics of athletes

Variable	Total sample N=176	Ranked athletes N=88
Mean age (SD)	17,89 SD 1,19	17,87 SD 1,12
Sex (%) Men Woman	39% 61%	31% 69%
Kind of spor (%) individual sport group sport	66% 34%	77% 23%

Sports experience	8,73 SD 3,16	9,77 SD 3,03
Competitive experience (%)		
World/national championship	26%	33%
Local championship	63%	67%
no competition experience	11%	
Sport rank %	50%	Elite athletes 17% Nationally ranked player 38% Class sportsman 45%

Correlations among the measures are shown in Table 2. Age was strongly correlated with self-efficacy to regulate exercises (r = -0.28, p < 0.01) and weakly correlated with Sport experience (r = 0.16, p < 0.05). The relationship between age and motivation and emotional regulation of athletes was not so strong: Sport experience, Competitive experiencers and Sport rank are positively correlated with each other (the higher the experience of the athlete, the higher his/her qualification and sports level).

Self-efficacy was positive and significant correlated with Internal motivation and External motivation of sportsmen (r = 0.41, r = 0.2, p < 0.001), and negative with Amotivation (r = -0.26, p < 0.01), as well as with Cognitive reappraisal as a way of emotional regulation of behavior (r = 0.28, p < 0.01). Three types of motivation were significantly related to each other and also related to emotional regulation.

Table 02. Correlations between age, sport experience, competitive experience, sport rank, sport self-efficacy, motivation and emotional regulation (N= 176)

	Age	Sport experience	Competitive experience	Sport rank	Self-efficacy to regulate exercises	Internal motivation	External motivation	Amotivation	Cognitive reappraisal	Expressive suppression
Age	1									
Sport experience	.161*	1								
Competitive experience	.056	-.104	1							
Sport rank	.105	.439**	.407**	1						
Self-efficacy to regulate exercises	-.283**	.105	-.098	.093	1					
Internal motivation	-.158*	-.002	.128	-.040	.419**	1				
External motivation	-.030	.040	.123	-.143	.201**	.465**	1			
Amotivation	.150*	-.026	-.102	-.093	-.263**	-.461**	-.225**	1		
Cognitive reappraisal	-.168*	-.051	.177*	-.143	.280**	.308**	.292**	-.210**	1	

| Expressive suppression | -.004 | -.054 | -.094 | -.167 | .131 | .059 | .125 | -.115 | .334** | 1 |

Note: *. Correlation is significant at the 0.05 level (2-tailed)

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Hierarchical regression analysis

We perform two hierarchy regression analyses to understand the influence of shared variance of demographics parameters, sport-related parameters, sport motivation, and emotional regulation. We add as prediction variables: sex, age (1st step); kind of sport, sports experience, and competitive experience ((2nd step); motivation dimensions (3d step); and cognitive reappraisal and expressive suppression (4th step). The self-efficacy to regulate exercises was the dependent variable for the first hierarchy regression analysis and sports rank for the second (Table 3).

Table 03. Regression analysis results for the Self-efficacy to regulate exercises as dependent variable (N=176)

Predictor	b	beta	t	p-level
(Constant)	63.77		3.96	.00
Sex	-1.68	-.07	-1.01	.31
Age	-1.70	-.19	-2.60	.01
Kind of sport	-.31	-.01	-.18	.85
Sport experience	.16	.05	.60	.55
Competitive experience	2.75	.24	3.13	.00
Internal motivation	1.74	.34	4.11	.00
External motivation	-.13	-.03	-.41	.68
Amotivation	.01	.00	.04	.97
Cognitive reappraisal	.22	.12	1.65	.10
Expressive suppression	.16	.06	.84	.40

Note: R^2 = .27 for Step 4; $F_{(10\ 164)}$ = 7.49; $p<.001$.

   Sex was coded as follows: Male = 1; Female = 2;

   Kind of sport: 1 = individual; 2 = team sport;

   Competitive experience: 0 = no experience; 1 = local competition; 2 = regional competition; 3 = national competition.

Findings of the regression on the Self-efficacy to regulate exercises showed that Internal motivation was the strongest predictor, then Competitive experience and Age (negative) are also significant predictors.

Next, the second hierarchy regression analysis was made (Table 4). We were based on the previous findings we may expect the influence of emotion and motivation on the Sport rank (Fairholme et al., 2010).

Table 04. Regression analysis results for the Sport rank as dependent variable (N=88)

Predictor	b	beta	t	p-level
(Constant)	4.48		1.82	.07
Sex	.18	.08	.74	.46
Age	-.05	-.05	-.47	.64
Kind of sport	-.22	-.08	-.83	.41
Sport experience	.11	.30	2.97	.00
Competitive experience	.50	.37	3.50	.00
Internal motivation	-.01	-.02	-.15	.88
External motivation	-.06	-.15	-1.39	.17

Amotivation	-.03	-.11	-1.01	.32
Cognitive reappraisal	-.03	-.17	-1.62	.11
Expressive suppression	.00	-.02	-.16	.87

Note: R^2 = .37 for Step 4; $F (10\ 77)$ = 4.51; $p < .001$.

Sex was coded as follows: Male = 1; Female = 2;

Kind of sport: 1 = individual; 2 = team sport;

Competitive experience: 0 = no experience; 1 = local competition; 2 = regional competition; 3 = national competition.

Sport rank is positively associated with Competitive experience and Sport experience.

7. Conclusion

The purpose of this study was to study the characteristics that affect an athlete's success and to identify the links between self-efficacy, motivation, and modes of emotional regulation. Our data show that athletes with high levels of self-efficacy are less demotivated and more likely to use a Cognitive reappraisal strategy, i.e., a change in attitude to a situation or event that allows them to modify their emotional response, making them more competitive. Younger athletes are more motivated to achieve their goals and have higher self-efficacy but are weakened by adaptation to age and experience. Because motivation is linked to the emotional response, more motivated athletes find themselves more flexible concerning the competition or their failures, and they choose a strategy to change their attitude.

As a conclusion, we can say that Internal motivation is the primary psychological predictor for the Self-efficacy to regulate exercises. The other predictors are related to younger age and competition background on the national level. Intrinsically motivated participate in sport for internal reasons and have more firm belief in themselves, particularly young athletes, with experience in competition. This fact relates to the previous study (Ross-Stewart & Short, 2009).

The fact that the experience of athletes plays the primary role for Sport rank than psychological factors is known.

This study shows the association between sport achievement and self-efficacy. Among the constraints of our research is the small number of athletes who are top performers. Elite athletes may have predetermined our study concerning those with lower levels of self-efficacy. Further research is, therefore needed to examine these relationships.

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