

Personality Is an Intermediary of Stressful and Anxious Relationships before Women's Swimming Competition

Dao Chanh Thuc

Physical Education Department, AnGiang University, Vietnam

Abstract - This article is to study the intermediate effect of personal resources in the coordination of the premise of stress (the willingness to perceive competition and the complexity of goals) and anxiety. Settled before playing in the swimmers. **Methods:** We conducted validation and reconciliation analysis in the context of structural equation model to study cross-sectional survey data of female swimmers (n=79; M = 18.19 years; SD = 1.02). **Results:** Testing of the model of personality resources showed that the four indicators – self-efficacy, self-control, optimism and grit – constitute a single factor. As a result of intermediate analysis, an indirect part of the personality resource was obtained for the state of pre-competition anxiety. **Conclusion:** It was established, that personality sources (self-efficacy, self-control, optimism and grit) have a systematic organization and constitute an indispensable element at the level of real indicators experience. They mediate part of the effects of stress factors that compete on the level of situation anxiety, contributing to reducing athletes.

Keywords: stress, pre-competition anxiety, personality resources.

I. INTRODUCTION

The problem of anxiety, especially pre-competition anxiety, is one of the most relevant in sports psychology (Nahum, 2017). The state of anxiety is caused by various stressors as its antecedents (Hanton et al., 2008). There are cognitive and somatic components usually distinguished in an anxiety state. The cognitive aspect of anxiety is characterized by negative expectations for success or self esteem, concern over performance, pictures of failures, inability to concentrate and redirect attention. Somatic anxiety is caused by vegetative excitation of the body and manifested in such negative symptoms as muscle tension, rapid heart rate, high blood pressure, moist palms, etc. As the studies show, both cognitive and somatic anxiety may have a differentiated effect on athletic performance (Parnabas et al., 2015).

The most common theory in stress studies in the physiology of sport is Lazarus and Folkman transactional model of stress appraisal and coping (Lazarus & Folkman, 1984). According to this model, the cognitive assessment of the situation as a threat is the key factor in the development of psychological stress.

The conservation resource (COR) theory by S. Hobfoll (Hobfoll, 1989) tries to give the answer to this question. According to COR, the cause of stress is the loss of resources or a threat of their loss. The RCT defines resources as «... those entities that are either centrally valued in their own right or act as a means to obtain centrally valued ends» (Hobfoll, 2002). Hobfoll distinguishes four types of resources: 1) objective; 2) social; 3) energy; and 4) personality. The latter are decisive; they play a paramount role in the context of overcoming stress, providing the individual with the ability to adapt. Personality resources are aspects of Self, which are related to resistance to stress and to the sense of people in their ability to successfully control and influence the environment (Hobfoll et al., 2003).

According to Hobfoll, one of the key resources is a generalized sense of self-efficacy (Schwarzer & Jerusalem, 1995). Self-efficacy is defined as a belief in own ability to effectively influence own «environment» and achieve own goals. As Bandura showed, individuals with high self-efficacy are more stable in stressful situations (Bandura, 1997). The athletes' belief in self-efficacy has positive and moderate correlations with sport performance (Feltz, 2008).

The second key resource is dispositive optimism, which is understood as a positive attitude to the future (Carver & Scheier, 2002). It was found that this personality trait is one of the most important predictors of stress coping. A research analysis indicates that there is a correlation between optimism and sport performance (Chiesi et al., 2013).

Another important resource is self-control, as a conscious aspect of self-regulation, aimed at controlling own behavior relatively autonomously from external pressure, from innate or

acquired automatism and physiological impulses (Baumeister & Tierney, 2011). A number of studies have shown that the resource of self control is an important psychological mediator of the stress in sport (Furley et al., 2013). Another key resource is the ability to perseverance (grit). The «grit» concept is defined as the persistency in efforts and consistency of interests in achieving long-term goals, disregarding failures and obstacles, and an important factor of success in a variety of activities (Duckworth et al., 2007). Despite the fact that the «grit» construct is a relatively new subject of study in sports psychology, it has been established that athletes who stubbornly pursue their goals are more successful in sporting activities (Larkin et al., 2016).

Each of the four active structures is conceptually independent and valuable empirically discriminatory. In previous studies, these important sources of personality are considered separate predictors of anxiety or athletic performance. Their effect is moderate. It can be assumed that the combination of these four structures will be more predictable than any of them separately. Understanding stress is a process that allows logical association of three types of variables in anxiety research: premise (stress factor), intermediary (personality resource) and consequence (stress response). Therefore, the current study gives the following hypotheses.

Hypothesis 1: The four personality characteristics described above are related to each other by the general element of higher order - personality resource index.

Hypothesis 2: Personality resources mediate the influence of competitive stress factors on athletes' consciousness and activity and make them more resistant to stress, can control anxiety levels before competition.

The purpose of this paper is to study the intermediate effects of personality sources in the coordination of the premise of stress (the willingness to perceive competition and the complexity of goals) and the worry before playing in swimmers.

II. MATERIAL & METHODS

The study involved 79 female swimmers aged 16 to 20 years ($M = 18.19$ years, $SD = 1.02$). They were moderately experienced and moderately successful. All participants gave their consent before they received the questionnaire. Participants were provided with general information about the study and assured of the confidentiality and complete anonymity of the answers. Filling in the questionnaires, which

measured the anxiety antecedents and anxiety states, took place 1 hour before the start.

Antecedents of anxiety were measured using a modified Pre-Race questionnaire (Arapoglou et al., 2013). The analysis took into account two scales: perceived readiness and perceived complexity of the competition goal. The check of reliability and consistency of empirical data showed an acceptable internal consistency of scales (Cronbach's α .71 and .68, respectively).

Personality resources were measured: Overall self-efficacy scale (Schwarzer & Jerusalem, 1995). The reliability coefficient for the measure stands at $\alpha = .80$ in the present study. Self-control scale (Tangney et al, 2004). The internal consistency of the scale (Cronbach's α) in this study was .75.

Dispositional optimism test (LOT-R; Scheier et al., 1994). In the present study, the reliability coefficient for the measure stands at $\alpha = .78$.

Short grit scale (GRIT-S; Duckworth & Quinn, 2009). GRIT-S had an acceptable internal consistency of .77.

Spielberger short state anxiety self-assessment scale (Spielberger, 1985). The internal consistency of the scale was .87.

To test our hypotheses, we conducted a structural equation modeling that involved the confirmatory factor analysis and mediator analysis using AMOS 21 for Windows. The maximum likelihood method was used to evaluate the model parameters.

The correspondence of the model under study to the empirical data was estimated using the statistics of the chi-squared test (χ^2) and the root mean square error of approximation (RMSEA). The insignificant values of χ^2 indicate that the hypothetical model corresponds to the data, and the RMSEA values up to .08 indicate the acceptable relevance of data. In addition, we used a relative indicator of model matching quality: comparative fitness index (CFI). For this indicator, the value of .90 or higher is acceptable. (Dao ChanhThuc, 2018)

III. RESULTS

Table 1 shows the means, standard deviations, correlations, and the internal consistencies (Cronbach's alpha) of the variables included in the analyses. As can be seen from this table, all scales show satisfactory Cronbach's alpha.

TABLE 1
Internal Consistencies (Cronbach's as on the Diagonal), and Correlations Among the Variables (N=79)

		M	SD	1	2	3	4	5	6	7
1	Readiness	5.98	1.47	.64						
2	Difficulty of purpose	6.09	1.46	.53**	.66					
3	Self-efficacy	28.67	5.12	.25**	.23*	.78				
4	Self-control	37.33	6.18	.26*	.31**	.54***	.73			
5	Optimism	16.18	3.22	.31**	.32***	.41***	.48***	.77		
6	Grit	27.72	4.04	.32**	.43***	.34***	.62***	.38***	.78	
7	Anxiety state	9.94	3.13	.31**	.24*	-.22*	-.32***	-.34***	-.28**	.87

Note: * - $p < 0.05$; ** - $p < 0.01$; *** - $p < 0.001$.

To test the hypothesis 1, that 4 indicators of personality resources form a second-order factor, the model was tested (see Figure 1), which demonstrated good agreement with the

data: $\chi^2 = 2.423 (2)$; $p = .291$; RMSEA = .042; CFI = .989. To calculate the total indicator of personality resources (IPR), we used the sum of z-scores on 4 scales that are part of the factor.

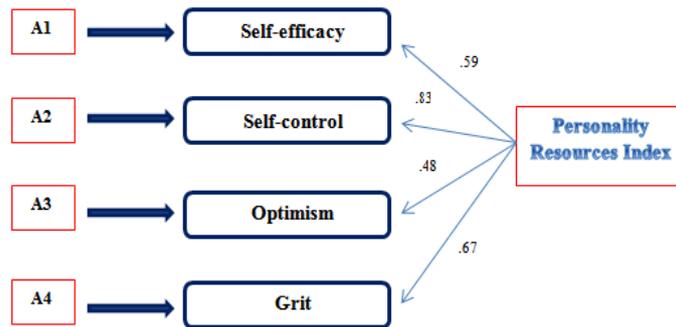


Figure 1: One factor CFI model personal resources index

Fig 2 shows the results of path analysis. As can be seen, the direct effect of perceived readiness of athletes to compete on pre-competition anxiety is positive and statistically significant ($\beta = .41$; $z = 4.81$; $p = .000$). The direct effect of the stressor, i.e. complexity of the competition goal on the state of anxiety is also statistically significant ($\beta = .37$; $z = 3.92$; $p = .000$).

The most important information in intermediate analysis is the indirect impact of stressors on the situation anxiety that is mediated by personality resources. It provides an opportunity to explain the nature and mechanism of communication, as well as the answer to the question of "how to do it" and "why" the human resource affects the state of competition anxiety in swimmers.

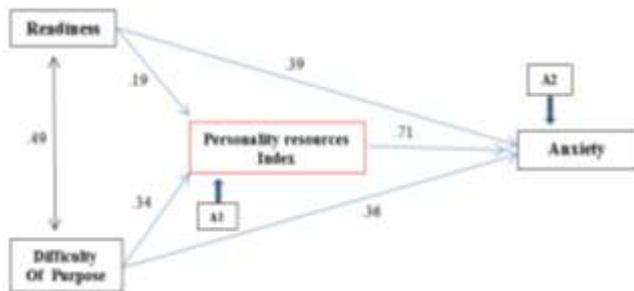


Figure 2: Mediator model of determination pre-competitive anxiety

Therefore, the standardized indirect impact of cognitive readiness for pre-competition anxiety through personality resources is estimated to be $-.16$ ($z = -1.83$; $p = 0.05$). That is, two different athletes in a standard unit, according to the level of cognitive readiness assessed the difference of $-.16$ units according to the level of competitive anxiety in reconciling personality resources. The confidence interval of bootstrap (from $-.27$ to -0.05) for this indirect effect is confirmed by the following statement with 95% to 98% confidence.

The indirect effect of the perceived complexity of the target on the state of competition anxiety, mediated by a source of personality, is estimated to be -0.27 ($z = -2.92$; $p = 0.001$). The confidence interval of bootstrap ranges from -0.34 to -0.06 . Because the direct effects of cognitive readiness and the complexity of the target for competition anxiety are significant, the result is partial mediation effects.

IV. DISCUSSION & CONCLUSIONS

This study deals with the associations between the antecedents of stress (perceived readiness and complexity of the competition goal) and the state of pre-competition anxiety in athletes, mediated by positive personality traits (personality resource: self-efficacy, self-control, optimism and grit).

The result data confirm the first hypothesis concerning the integral factor of personality resources, which determines the interrelation of the studied positive personality traits. Since the personality resources considered in our study are flexible personality traits and have a lifelong genesis, their correlation can be determined by the synergistic effect during the complication of athletes' activity and gain in experience.

A content analysis of the impacts of personality resource indicators on the latent factor obtained in the confirmatory model indicates that the most significant personality resources are self-control and perseverance. (ValeriiOlefir, 2018)

Athletes with a high level of self-control can better control their thoughts, regulate their emotions and slow down their impulses compared to those who have low self-control (ValeriiOlefir, 2018). A high level of perseverance contributes to the ability of athletes to focus on long-term goals and to withstand situational temptations and short-term achievements. These results are consistent with the numerous available data on the importance of self-control and perseverance as factors in resisting stress, self-control of the state of anxiety and competitive performance of athletes (Furley et al., 2013).

The study revealed a partial mediator effect of personality resources. Thus, the second hypothesis received partial confirmation. In a situation of sports competitions, personality resources perform a filtering function, mediating the influence of the competition situation on the consciousness and activity of athletes, participating in the assessment of the degree of influence of stress factors, by giving personality meaning to the situation (ValeriiOlefir, 2018). They alone do not carry an assessment, but their severity transforms the very subjective scale that underlies subjective assessments, contributing to the assessment of the situation. Personality resources help perceive the requirements of competitions as a challenge and

regard them as a complex task, rather than a threat to the psychological well-being of athletes.

A negative emotional state associated with a feeling of nervousness, worry, anxiety and excitement of an organism that athletes experience during competitions is defined as situational anxiety. Cognitive and somatic components of anxiety differentially influence the sport performance. (ValeriiOlefir, 2018)

The results of the study showed that the perceived readiness and complexity of the competition goal, which were considered as antecedents of anxiety, are positively and statistically significantly related to pre competition anxiety in swimmers.

Personality resources have a systemic organization and form an integral factor of personality resources at the level of empirical indicators.

The second-order factor of personality resources partially mediates the influence of competitive stress factors on the level of situational anxiety, contributing thereby to its reduction.

REFERENCES

- [1] Arapoglou, K., Bebetos, E., Pyliavidis, Th., & Antonioxi, P. (2013). Validation of the Pre-Race Questionnaire among mid-distance runners. *Athlitiki Psychologia*, 24, 3–10.
- [2] Bandura, A. (1997). Self-efficacy: The exercise of control. *New York: Freeman*.
- [3] Baumeister, R., & Tierney, J. (2011). Willpower: Rediscovering the Greatest Human Strength. *New York: Penguin Press*.
- [4] Carver, C.S., Scheier, M.F. (2002). Optimism // Handbook of Positive Psychology / ed. by C.R. Snyder, S.J.Lopez. *Oxford University Press*, P. 221–244.
- [5] Chiesi, F., Galli, S., Primi, C, Borgi, P.L, & Bonacchi, A. (2013). The accuracy of the Life Orientation Test Revised (LOT-R) in measuring dispositional optimism: Evidence from item response theory analyses. *Journal of Personality Assessment*, 95(5), 523-529.
- [6] Dao ChanhThuc, (2018). Measurement in sports. *LAP LAMBERT Academic Publishing*, ISBN 978-613-9-90198-2.
- [7] Duckworth, A. L., Peterson, C, Matthews, M. D., & Kelly, D. R. (2007). Personality processes and individual differences. *Journal of Personality and Social Psychology*, 6, 1087-1101.

- [8] Duckworth, A.L., Quinn, P.D. (2009). Development and validation of the Short Grit Scale (Grit-S). *Journal of Personality Assessment*, 91, 166–174.
- [9] Feltz, D. L. (2008). Self-Efficacy in Sport: Research and strategies for working with athletes, teams, and coaches / D. L. Feltz, S.E. Short, and P. J. Sullivan. *Human Kinetics*.
- [10] Furley, P., Bertrams, A., Englert, C., Delphia, A. (2013). Ego depletion, attentional control, and decision making in sport. *Psychology of Sport and Exercise*, 14, 900–904.
- [11] Hanton, S., Neil, R., Mellalieu, S.D. & Fletcher, D. (2008). Competitive experience and performance status: An investigation into multidimensional anxiety and coping. *European Journal of Sport Science*, 5(3), 143–152.
- [12] Hobfoll, S. E., Johnson, R. J., Ennis, N., & Jackson, A. P. (2003). Resource loss, resource gain, and emotional outcomes among inner city women. *Journal of Personality and Social Psychology*, 84, 632–643.
- [13] Hobfoll, S.E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44, 513-524.
- [14] Hobfoll, S.E. (2002). Social and psychological resources and adaptation. *Review of General Psychology*, 6(4), 307-324.
- [15] Larkin, P., O'Connor, D., & Williams, A.M. (2016). Does grit influence sport-specific engagement and perceptual-cognitive expertise in elite youth soccer? *Journal of Applied Sport Psychology*, 28(2), 129–138.
- [16] Lazarus, R.S., Folkman, S. (1984). *Stress, appraisal, and coping*. N.Y.: Springer.
- [17] Nahum, O. (2017). Stress research in sport psychology: Three limitations and future directions. In Moore, K.A. & Buchwald, P. (Eds.) *Stress and Anxiety – Coping and Resilience*, (pp. 177-186). Berlin: Logos Publishers.
- [18] Parnabas, V., Parnabas J., Parnabas A.M. (2015). The Relationship between Somatic Anxiety and Sport Performance on Running Athletes. *European Academic Research*, II(10), 14769-14775.
- [19] Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, 67, 1063–1078.
- [20] Schwarzer, R., & Jerusalem, M. (1995). Generalized Self-Efficacy scale. In J. Weinman, S. Wright, & M. Johnston, *Measures in health psychology: A user's portfolio. Causal and control beliefs* (pp. 35-37). Windsor, UK: NFER-NELSON.
- [21] Spielberger C. D. (1985). Assessment of state and trait anxiety: conceptual and methodological issues. *Southern Psychologist*, 2, 6-16.
- [22] Tangney, J.P., Baumeister, R.F., Boone, A.L. (2004). High Self-Control Predicts Good Adjustment, Less Pathology, Better Grades, and Interpersonal Success. *Journal of Personality*, 271–324.
- [23] Valeriu Olefir. (2018). Personality Resources As A Mediator Of The Relationship Between Antecedents Of Stress And Pre-Competitive Anxiety. *Journal of Physical Education and Sport*, pp. 2230 – 2234.

Citation of this article:

Dao Chanh Thuc, "Personality Is an Intermediary of Stressful and Anxious Relationships before Women's Swimming Competition", Published in *International Research Journal of Innovations in Engineering and Technology (IRJIET)*, Volume 3, Issue 3, pp 1-5, March 2019.
