

Mental toughness as predictor of state anxiety of Serbian athletes

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Abstract

The goal of this research was to test whether and to what extent mental toughness contribute to the explanation of state anxiety in athletes. This study relied on a multidimensional construct of anxiety which includes somatic and cognitive anxiety. Dimensions of anxiety were measured with “Competitive State Anxiety Inventory-2” (cognitive and somatic anxiety), and mental toughness was measured with “Sports Mental Toughness Questionnaire”. The research sample consisted of 117 athletes, 67 men and 50 women, who have been actively engaged in various competitive sports. The structure of the sample by age was: 64 athletes are from 20 to 25 years old; 19 respondents aged 25 to 30; 31 athletes aged 30 to 35; and 4 respondents are over 35 years old. The results showed statistically significant correlations between dimensions and overall mental toughness on the one hand and cognitive anxiety and somatic anxiety on the other. Multiple regression analysis was conducted with the aim of predicting the dimensions of anxiety based on mental toughness. Based on the dimensions of mental toughness, 25% of the variability of cognitive anxiety and 22% of somatic anxiety were explained. Self-confidence as a dimension of mental strength is a predictor of all dimensions of the state of anxiety. This study has indicated a great significance of developing athletes’ mental toughness with the goal of reducing anxiety and achieving better performance in competitions.

Keywords mental toughness • cognitive anxiety • somatic anxiety • self-confidence • athletes.

Introduction

Mental toughness represents one of key attributes for success in competitive sports and for the development of elite athletes (Connaughton & Hanton, 2008; Crust & Clough, 2011).

Goldberg (2005) defines mental toughness as an athlete’s ability to cope with pressure / stress / adversity, to rebound from failures, to persevere, and to be emotionally resilient. Mentally tough athletes tend to be committed, self-motivated, to overcome stress more efficiently, to have the capacity of higher concentration, even when under pressure or when high demands for success and overcoming failure are placed in front of them (Baker, Côté, Deakin, 2005; Crust & Clough, 2011). Creasy, Stratton, Maina, Rearick and Reincke (2008) indicated important personal characteristics of athletes with high mental toughness. In overview, athletes with high mental toughness have unwavering faith in oneself, one’s qualities and abilities that make him/her better than the opponent and belief in one’s ability to achieve goals. Internalized motivation and strong will and desire to win despite the obstacles on the way to sports’ goals lead them to be more persistent. Athletes with high mental toughness have good physical, mental, and emotional readiness for play and competition. And they are ready to push their boundaries of physical and emotional pain in order to achieve the desired goal. In situations of a current sport failure and challenge they are resilient, and directed toward resolving them, not faltering under pressure conditions during the competition.

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Sport practice shows that, as factors, physical competence and physical preparedness are not enough when it comes to success in sports. Of equal, if not even of greater, importance are numerous psychological factors as personality traits, self-confidence, sport anxiety. Anxiety is defined as fear, worry, tension, disharmony, and discomfort. In sports, anxiety is associated with the situations of skill performance and it is manifested as a result of the conflict between, on the one hand, desire, striving and the need to achieve a goal, and on the other hand, worry, fear and discomfort that the goal in question cannot be achieved, and the consequences that one's failure to achieve that goal carries with it (Lazarević, 2003). Anxiety as an emotion may appear as a structural personality trait and also as a transitory state associated with a particular sport situation. Anxiety as a personality trait is a structured, relatively permanent and stable, disposition, a tendency to perceive numerous situations as threatening or jeopardizing although, in objective terms, they are not and do not have to be such.

According to multi-dimensional theory of anxiety (Martens, Burton, Vealey, Bump, Smith, 1990) state anxiety includes a somatic and cognitive component. Somatic state anxiety refers to the indicators of autonomous excitement as manifested in the form of elevated heart rate, sweaty hands, discomfort in the stomach, tension and pain in the muscles, rapid breathing, blurred vision, etc. (Petrović & Trbojević, 2020). Cognitive anxiety refers to the assessment of the situation and oneself, primarily to the negative interpretation of the situation and one's own abilities in certain situations (Jakšić, Trbojević Jocić, Maričić, Miçooğullari, 2020). Cognitive anxiety signifies anxious thoughts, incessant anticipation of unfavorable outcomes of events, too much worry about possible negative consequences, cognitive preoccupation with oneself and with the events that are beyond one's reach and control.

Owing to its great significance for athletes' success, numerous studies have examined various factors that contribute to competition anxiety (Dal, 2018), including mental toughness. However, the results of the studies have not consistently confirmed the connection between mental toughness and anxiety on the athletes' sample. Namely, in the studies on the sample of female basketball (Tahmasebi, Mirheydari, Kaviri, Shaheini, 2012) and tennis players (Cowden, Fuller, Anshel, 2014) no statistically significant correlations between mental toughness and anxiety were found. On the other hand, the connection between mental toughness and anxiety traits was

determined on a sample of young athletes (Kalinin, Balázs, Péntek, Duică, Hanțiu, 2019) and hockey players (Rasyid, Lee, Nadzalan, Tengah, 2019). Results of the study (Hossein, Mohd, Soumendra, Anwar, Muzaimi, 2016) have shown the correlations between the dimension and overall mental toughness and anxiety trait. The study (Schaefer, Vella, Allen, Magee, 2016) has established the mediation effect of mental toughness on the relation between the motivation of golfers and their competitive anxiety. However, few researchers (Algani, Yuniardi, Masturah, 2018; Miftakhul, Lina, Nabila, Widohardhono, 2018) found correlation between mental toughness and the state of anxiety. Athletes with higher scores on mental toughness obtained lower scores on anxiety and vice versa. These results show that obtaining mental toughness that is, athletes who work on obtaining and strengthening skills of mental toughness have lower anxiety. Therefore, mental toughness can be observed as factor that reduces level of worry, and builds confidence.

There is a great significance of mental toughness and anxiety for athletes' success, mental health, and psychological readiness for competition (Gucciardi, Stamatis, Ntoumanis, 2017, Micoogullari, Odek, Beyaz, 2017, Muhammad, Khan, Khan, 2020, Zeiger, Zeiger, 2018). In order to understand athletes' anxiety better, it is necessary to establish whether mental toughness contributes to the development of this significant factor for athletes' success. The goal of this research was to test whether and to what extent mental toughness contribute to the explanation of state anxiety in athletes. In other words, the following results were expected: negative relations between dimensions of mental toughness on the one hand and cognitive and somatic anxiety on the other.

Method

Sample

The research sample consisted of 117 athletes, 67 men and 50 women. The structure of the sample by age was: 64 athletes are from 20 to 25 years old; 19 respondents aged 25 to 30; 31 athletes aged 30 to 35; and 4 respondents are over 35 years old. Examined athletes were professional and active players who have been engaged in various competitive sports. The sample consisted of 54 athletes of individual sports (archery, different types of martial arts, tennis) and 64 athletes of collective sports (basketball, football, volleyball) and the average number of years of training was 13.31 (SD=6.48).

Research procedure

The research was conducted from February to the end of April of 2021. Athletes from Belgrade, Pirot, Niš and Novi Sad filled out the questionnaires. The respondents were informed about the purpose of research, anonymity and the manner of data usage. It took them 15 minutes on average to fill out the questionnaire. Statistical data processing was conducted by the program IBM SPSS Statistics 21. Within data processing, Pearson's correlation coefficient and multiple regression analysis were used.

Instruments

Mental toughness was measured with "Sports Mental Toughness Questionnaire" (Sheard, Golby, van Wersch, 2009). This questionnaire is made up of 14 statements with an offered Likert-type four-degree scale for saying how much athlete agree or disagree with a given statement. The questionnaire measures three dimensions and overall mental toughness. The questionnaire consists of three subscales: self-confidence (Under pressure I can make decisions with confidence and commitment), consistency (I am committed to doing tasks I have to do) and control (I get upset about events I didn't expect or I cannot control). The reliability (Cronbach's alpha coefficient) of the scales of this instrument of this sample were high (consistency $\alpha = 0.78$; control $\alpha=0.92$; self-confidence $\alpha=0.82$, total mental toughness $\alpha=0.87$).

Anxiety was measured with "Competitive State Anxiety Inventory-2" (Martens et al., 1990). This questionnaire is made up of 27 statements with an offered Likert-type four-degree scale for saying how much athlete agrees or disagrees with a given statement. The questionnaire consists of three subscales: cognitive anxiety (I am worried because I am afraid, I will not be able to concentrate) and somatic anxiety (I can feel my heart beating). The reliability of the scale of this instrument of this sample were high (cognitive anxiety $\alpha=0.86$; somatic anxiety $\alpha=0.88$).

The questionnaire also contained demographic variables: gender, age, type of sports that the respondent plays (individual or team sport), years that respondents have spent training that sport.

Results

The overview of study results consisted of the correlations between the basic variables and predictions of dimensions of anxiety based on the mental toughness of athletes through the use of regression analyses. First, it was presented correlations between athletes' mental toughness, on the one hand, and cognitive and somatic anxiety on the other.

The results (Table 1) showed statistically significant correlations between dimensions and overall mental toughness on the one hand and cognitive anxiety and somatic anxiety on the other.

Table 1. Correlations between dimensions and overall mental toughness on the one hand and cognitive anxiety, somatic anxiety and self-confidence on the other

| | Cognitive anxiety | Somatic anxiety |
|------------------|-------------------|-----------------|
| Consistency | -0.382** | -0.328** |
| Control | -0.365** | -0.398** |
| Self-confidence | -0.469** | -0.430** |
| Mental toughness | -0.491** | -0.462** |

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

Two regression analyzes were conducted. The predictors of these analyzes were the dimensions of mental toughness (control, consistency and self-confidence), and the criteria were cognitive anxiety and somatic anxiety.

When cognitive anxiety is in question, the multiple correlation coefficient ($R=0.497$) was statistically significant ($F(3)=12.461$; $p=0.00$). Of the total

variability with respect to this criterion variable, 25 % ($R\text{ Square}=0.247$) could be explained based on the fact that athletes differed from one another in terms of mental toughness. An overview of partial standardized regression coefficients (Table 2) indicated that self-confidence had a statistically significant contribution to the explanation of individual differences in terms of level of cognitive anxiety. The partial contributions of other predictors were not statistically significant.

Table 2. Prediction of athlete's cognitive anxiety based on dimensions of mental toughness

| | Beta | T | P |
|-----------------|--------|--------|-------|
| Consistency | -0.079 | -0.742 | 0.460 |
| Control | -0.162 | -1.610 | 0.110 |
| Self-confidence | -0.333 | -3.066 | 0.003 |

Second regression analysis, in which the criterion variable was somatic anxiety and predictors were dimensions of mental toughness (Table 3), showed that the multiple correlation coefficient ($R=0.468$) was statistically significant ($F(3)=10.654$; $p=0.00$). It

was established that 22% ($R\text{ Square}=0.219$) of somatic anxiety variability could be explained based on dimensions of mental toughness. Only self-confidence was a statistically significant predictor of somatic anxiety. significant.

Table 3. Prediction of athlete's somatic anxiety based on dimensions of mental toughness

| | Beta | T | P |
|-----------------|--------|--------|-------|
| Consistency | -0.191 | -1.761 | 0.081 |
| Control | -0.085 | -0.830 | 0.408 |
| Self-confidence | -0.268 | -2.417 | 0.017 |

Discussion and conclusions

Given the ever-stronger focus on success and achievements in sports, there is a large interest of researchers in establishing all the factors that contribute to this. Studies have continually confirmed anxiety and mental toughness are factors that impact the achievements of athletes (Crust & Clough, 2011; Pineda-Espejel et al., 2011). The goal of this research was to test whether and to what extent mental toughness contribute to the explanation of state anxiety in athletes.

The results showed statistically significant correlations between consistency on the one hand and cognitive anxiety, somatic anxiety on the other. Athletes that are more committed, persistent in reaching their goals, and stable in their efforts to achieve success exhibit less concern about possible failure and mistakes and, thereby, exhibit fewer somatic manifestations of anxiety. On the other hand, athletes that easily quit when faced with great challenges have anxious thoughts and somatic symptoms of anxiety to a greater extent.

Also results showed correlations between control on the one hand and cognitive anxiety, somatic anxiety on the other. Athletes that do not falter when faced with a current failure, but make progress in pressure conditions of competitions, exhibit cognitive and somatic anxiety to a lesser extent. Whereas, the athletes who do not have a strong ability to adequately control their emotions and behaviour, who are

overwhelmed by emotions when the course of the match is not favourable for them, are anxious to a greater extent. These athletes who fear their mistakes, feel concerned about whether they will play well and whether they will respond to the challenges of the game.

In this study results showed significant correlations between self-confidence as a dimension of mental toughness on the one hand and dimensions of anxiety on the other. Athletes that consider themselves to have exceptional skills that distinguish them from competitors have lower cognitive and somatic anxiety. These athletes are more self-confident and believe more in themselves and their technical, tactical and psychological readiness for competitions exhibit cognitive and somatic anxiety to a lesser extent. The athletes that doubt themselves and their abilities also fear potential mistakes and failures and have somatic symptoms of anxiety.

The results showed statistically significant correlations between overall mental toughness on the one hand and cognitive anxiety and somatic anxiety on the other. Athletes that are persistent, decisive, unfaltering in their plans, have strong emotional and behavioural control are not anxious and have no somatic manifestations of anxiety. Mentally tougher individuals are characterized by a high level of self-control, commitment, and consistency, and they perceive problems as challenges that need to be overcome (Gucciardi et al., 2014). Such cognitive and motivational approach can explain why mentally tough athletes have lower anxiety (Schaefer et al.,

2016). Mentally tougher individuals do not interpret competitive situations as threatening and do not react to them with negative and non-functional thoughts and behaviours. On the other hand, athletes who are unconscientious, impulsive, who avoid demanding and difficult tasks, do not believe in themselves, are not determined, and do not adequately control their emotions and behaviour have a more pronounced cognitive and somatic anxiety.

Regression analyses showed that based on the dimensions of mental toughness, 25% of the variability of cognitive anxiety and 22% of somatic anxiety were explained. Self-confidence as a dimension of mental toughness was a predictor of dimensions of anxiety.

The essential drawback of this study, which one must bear in mind when interpreting the study results, is the number of respondents. The study sample was appropriate because it prevalently consisted of athletes who were attending sport studies or had graduated from a faculty of sports, that is to say, of athletes who were interested in improving their sport performances with the knowledge provided by science. Further limitations stem from the exclusive reliance on self-reporting questionnaires without alternative forms of evaluation or evaluation by third parties.

An analysis of the results of this study makes it possible to suggest the future directions of similar researches. For instance, a future study should include a larger number of respondents and a comparison between respondents at different competition levels (regional, national and international). When collecting information about the individual, future researches should, apart from athletes, also take into account other sources from their environment, such as the expert team, their coaches and teammates. A recommendation for future studies on this topic would be to also include other variables, such as: locus of control, strategy for coping with stress, internalized and externalized motivation, self-efficiency, anxiety as a personality trait and attitudes to success. Every sport has its peculiarities and this determines what is required of an athlete when it comes to his abilities, traits, and skills. Therefore, it would be significant to create a questionnaire on anxiety as a state which would be adapted to the peculiarities and demands of a particular sport.

The skill of maintaining an optimal and stable psychological state during a competition is of utmost importance to athletes (Galli, Gonzales, 2015; Gómez-López, Borrego, da Silva, Granero-Gallegos,

González-Hernández, 2020; Neves, Barbosa, Da Silva, Brandão, Zanetti, 2018). The results of this study showed that the dimensions of mental toughness are important predictors of athletes' anxiety, which suggests that they must be taken into account when creating anxiety reduction interventions. The recommendation of this and other studies (Kalinin et al., 2019; Mann, Singh, Hooda, 2018; Rasyid et al., 2019) is that boosting mental toughness of athletes can lead to reducing anxiety and maintaining awareness on the optimal level, which all results in good performance in competition. It is important that psychologists, trainers, and expert teams work with athletes on boosting mental toughness and increasing athletes' capacities to cope with anxiety, and all with the aim of better sports achievement. Work on the skills such as emotion regulation, psychological resilience, understanding and accepting situations of uncertainty, taking responsibility, accepting and recovery from a failure can increase an athlete's capacity to deal with anxiety. Additionally, developing sports mentality in an athlete to perceive competitive challenges as opportunities, with unwavering faith in their abilities, strengthening internalized motivation and focus on sports despite personal disruptions can contribute to the reduction of athletes' competition anxiety. It is of great importance that athletes develop constructive methods of coping with stress and pressure. Psychological skills that boost mental toughness, such as setting goals, positive self-talk, visualization, and relaxation techniques all influence competition anxiety and self-confidence (Hossein et al., 2016). The obtained findings are significant not only for researchers for better understanding of anxiety in sports context, but also for practitioners, trainers, and athletes themselves.

References

- Algani, P., Yuniardi, M., Masturah, N. (2018). Mental Toughness Dan Competitive Anxiety Pada Atlet Bola Voli. *Journal Imiah Psikologi Terapan*, 6(1), 93-101. <https://doi.org/10.22219/jipt.v6i1.5433>
- Baker, J., Côté, J., Deakin, J. (2005). Cognitive characteristics of expert, middle of the pack, and back of the pack ultra-endurance triathletes. *Psychology of Sport and Exercise*, 6, 551-558. <https://doi.org/10.1016/j.psychsport.2004.04.005>
- Connaughton, D., Hanton, S. (2009). Chapter 2- Mental toughness in sport: conceptual and practical issues: Chapter taken from *Advances in Applied Sport Psychology*, ISBN 9780415577021 Routledge (pp. 221-250)

- Cowden, R., Fuller, D., Anshel, M. (2014). Psychological Predictors of Mental Toughness in Elite Tennis: An Exploratory Study in Learned Resourcefulness and Competitive Trait Anxiety. *Perceptual & Motor Skills: Exercise & Sport*, 119 (3), 661-678. <https://doi.org/10.2466/30.PMS.119c27z0>
- Creasy, J., Stratton, R., Maina, M., Rearick, M., Reincke, K. (2008). Mental toughness in sports. *Coach and Athletic Director*, 77(9), 30-41.
- Crust, L., Clough, P. J. (2011). Developing mental toughness: From research to practice. *Journal of Sport Psychology in Action*, 2(1), 21-32. <https://doi.org/10.1080/21520704.2011.563436>
- Dal, N. (2018). The Big Five Personality Traits and Narcissism as the Predictors of Anxiety and Confidence before Archery Class Final Exam. *Universal Journal of Educational Research*, 6(12), 2875-2879. <https://doi.org/10.13189/ujer.2018.061222>
- Galli, N., Gonzalez, S. (2005). Psychological resilience in sport: A review of the literature and implications for research and practice. *International Journal of Sport and Exercise Psychology*, 13, 243-257. <https://doi.org/10.1080/1612197X.2014.946947>
- Goldberg, A. S. (2005). *Sports slump busting: 10 steps to mental toughness and peak performance*. Llumina Press.
- Gómez-López, M., Borrego, C., da Silva, C., Granero-Gallegos, A., González-Hernández, J. (2020). Effects of motivational climate on fear of failure and anxiety in teen handball players. *International journal of environmental research and public health*, 17, 592-602. <https://doi.org/10.3390/ijerph17020592>
- Gucciardi, D., Hanton, S., Gordon, S., Mallett, C., Temby, P. (2014). The Concept of Mental Toughness: Tests of Dimensionality, Nomological Network and Traitness. *Journal of personality*, 83(1) 26-44. <https://doi.org/10.1111/jopy.12079>
- Gucciardi, D., Stamatis, A., Ntoumanis, N. (2017). Controlling coaching and athlete thriving in elite adolescent netballers: the buffering effect of athletes' mental toughness. *Journal of science and medicine in sport*, 20, 718-722. <https://doi.org/10.1016/j.jsams.2017.02.007>
- Hossein, A., Mohd, R., Soumendra, S., Anwar, H., Muzaimi, M. (2016). Relationship Between Mental Toughness and Trait Anxiety in Sports. *International Journal of Pharma and Bio Sciences*, 7(3), 275-281.
- Jakšić, D., Trbojević, Jocić, J., Maričić, S., Mićoogullari, B. (2020). Psychometric properties of a Serbian version of the State-Trait Anxiety Inventory X-2. *EQOL Journal*, 12(2), 13-22, <https://doi:10.31382/eqol.201202>
- Kalinin, R., Balázs, R., Péntek, I., Duică, S., Hanțiu, I. (2019). Relationship between competitive anxiety and mental toughness: a latent regression analysis. *Health, sport, rehabilitation medicine*, 20 (2), 70-74. <https://doi.org/10.26659/pm3.2019.20.2.70>
- Lazarević, Lj. (2003). *Psihološka priprema sportista*. Viša škola za sportske trenere.
- Mann, A., Singh, G., Hooda, H. (2018). Mental toughness and competitive anxiety between high and low performer's football players. *International Journal of Physiology, Nutrition and Physical Education*, 3(1), 938-941.
- Martens, R., Burton, D., Vealey, R. S., Bump, L., Smith, D. (1990). Chapter 2-Development and validation of the competitive state anxiety inventory-2: Chapter taken from Competitive Anxiety in Sport, ISBN: 978-0873222648. Human Kinetics (pp. 117-190).
- Micoogullari, B. O., Odek, U., Beyaz, O. (2017). Evaluation of sport mental toughness and psychological wellbeing in undergraduate student athletes. *Educational Research and Reviews*, 12(8), 483-487. <https://doi.org/10.5897/ERR2017.3216>
- Miftakhul, J., Lina H., Nabila, N., Widohardhono, R. (2018). *Anxiety and Mental Toughness Among Athlete Students.*, Paper presented at the conference on Proceedings of the 2nd International Conference on Education Innovation (ICEI 2018), Retrieved May, 25 2021, from <https://doi.org/10.2991/icei-18.2018.119>
- Muhammad, N., Khan, M., Khan, W. (2020). Effect of different types of Anxiety on Athletes Performance; Planning and Managing Strategy to cope with Athletes' Anxiety. *City University Research Journal*, 10 (3), 473-481
- Neves, A., Barbosa, F., Da Silva, M., Brandão, M., Zanetti, M. (2018). Confirmatory factor analysis of the Brief Resilience Scale for Brazilian athletes. *Cuadernos de Psicologia del Deporte*, 18, 103-110.
- Petrovic, J., & Trbojevic, J. (2020). *Psihologija sporta*. Novi Sad: Filozofski fakultet.
- Pineda-Espejel, A., López-Walle, J., Rodríguez, J., Villanueva, M., Gurrola, O. (2011). Pre-competitive Anxiety and Self-confidence in Pan American Gymnasts. *Science of Gymnastics Journal*, 5(1), 39-48.
- Rasyid, N., Lee, J., Nadzalan A., Tengah, R. (2019). Relationship Between Mental Toughness, Sports Competition Anxiety and Performance among Women's Hockey Team. *Advances in Social Science, Education and Humanities Research*, 362, 23-38. <https://doi.org/10.2991/acpes-19.2019.21>
- Schaefer, J, Vella, S., Allen, S., Magee, A. (2016). Competition Anxiety, Motivation, and Mental Toughness in Golf. *Journal of Applied Sport Psychology*, 28(3), 309-320. <https://doi.org/10.1080/10413200.2016.1162219>
- Sheard, M., Golby, J., van Wersch, A. (2009). Progress toward construct validation of the sports mental toughness questionnaire (SMTQ). *European Journal of Psychological Assessment*, 25, 186-193. <https://doi:10.1027/1015-5759.25.3.186>
- Tahmasebi, B., Mirheydari, S., Kaviri, Z., Shaheini, S. (2012). The Survey of Relationship and Comparison: Emotional Intelligence, Competitive Anxiety and Mental Toughness Female Super League Basketball Players. *Procedia Social and Behavioral Sciences*, 46, 1440-1444. <https://doi:10.1016/j.sbspro.2012.05.317>

Zeiger, S., Zeiger R. (2018). Mental toughness latent profiles in endurance athletes. *PLoS ONE*, 13(2), 1-15.
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