THE PREDICTIVE RELATIONSHIP BETWEEN COPING MECHANISMS AND SELF-EFFICACY IN ADOLESCENT ATHLETES

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Abstract
In sport psychology, coping with challenges is critical to the success and well-being of athletes. Self-efficacy, as one of the most important features of successful athletes, plays a significant role in designing their training and development programmes. The goal of this exploratory research was to examine and determine whether and how coping strategies for stressful situations can be used as predictors of the psychological factor of self-efficacy in adolescent athletes. The total sample of participants in this study consists of 167 adolescent athletes, that is, 90 boys and 77 girls. Variables in the research were operationalised using appropriate instruments. Statistical techniques for data processing used in this research were the Pearson correlation coefficient and multiple regression. The most important findings of the study include a statistically significant model that can explain 28.6% of the variance for the criterion in the sample of respondents. Task- and emotion-oriented coping mechanisms were identified as statistically significant predictors. Self-efficacy was higher in athletes with higher task orientation, and lower in those with emotion orientation.

Key words: young athletes, performance, anticipating self-efficacy, coping skills.
The skill level of an athlete at a specific point of time depends on a number of factors. In addition to physical fitness, determined by age at which training begins, staying committed to training and competition, and certain psychological differences among athletes that can be used to predict performance have been shown by research to be important factors (Daroglu, 2011). Success in high performance sports requires the continuous handling of ever-changing challenges that can interfere with an athlete’s pursuit of excellence, as well as his or her general physical and psychological well-being (Mellalieu & Hanton, 2015). Some of the challenges athletes can encounter include tough opponents, injuries, performance plateaus, performance declines, problems in the coach-athlete relationship, constant media attention, personal and social over-expectations, and organisational policy (Hanton et al., 2005; Mosevich et al., 2013; Nicholls and Polman, 2007). Other agents, such as personal background, cultural context, private life, social relations, and present conditions should not be ignored, because they are also likely to have an impact on the current capacities and resources of an individual and, thus, on the perception and handling of stressful situations. The incapacity of an athlete to cope with stressors is an important determinant that can result in failure and performance decline (Lazarus, 2000). However, experiencing success in coping and self-efficacy can result in a positive impact of stress on performance. Research in stress neurobiology has shown that, though hormones and other physiological agents that contribute to stress effects on the body can have short protective and adaptive effects and can increase the capability of the body to respond to a stressful situation by providing fast, almost instant responses, and by allowing the body to select a proper strategy and restore homeostasis, they can still increase pathophysiology where they are abundant or poorly regulated (Godoy, Rossignoli, Delfino-Pereira, Garcia- Cairasco & de Lima Umeoka, 2018). Some players and

Кључне речи: млади атлетичари, перформанс, предвиђање самоэффикасности, вештине превазилажења.
coaches are capable of coping with stressful situations better than others because stress effects on performance depend on athletes’ individual differences (Sivrikaya, 2018). Jones (Jones, 1995; after Mitić, 2016) argues that neither positive nor negative effects of stress-induced anxiety are primarily dependent on the intensity of the stressor or the symptoms of anxiety, but on the perception of control over one’s own skills and conditions in the environment. One of the key aspects of sport psychology deals with understanding and interpreting the relationship between psychological factors and physical activity, and the success of athletes (Tubić, 2014; Lazarević, 2001; after Mitić, 2016).

It is common knowledge that self-efficacy is one of the primary psychological factors of success. Self-efficacy influences every single aspect of the human endeavour, and is one of the most important features of a successful athlete. The way people perceive their own capabilities of handling various situations has a strong impact on their actual strength in competent coping with challenges and choices. Self-efficacy implies a sense of competence, relevance and capability to cope with life challenges, and it is defined by one’s confidence in the ability to perform a successful practical action, or to accomplish a specified result in the case of athletes (Sivrikaya, 2018). Bandura defines self-efficacy as an individual’s belief in his or her capacity to execute behaviours necessary to produce specific performance attainments. It is a self-evaluation construct, and a key component of the self-system comprised of the attitudes, abilities and cognitive skills of an individual. High self-efficacy increases the possibility of the successful accomplishment of the given task (Bandura, 1982). Research in sport in general has demonstrated a positive relationship between perceived self-efficacy and sport performance (Mueller, 1992; Weigand & Stockham, 2000; after Mitić, 2016), and indicated its important role in understanding individual differences in the perception of anxiety and stress in athletes (Wittig, Duncan & Schurr, 1987; after Mitić, 2016). Self-efficacy facilitates coping with stress, but also has an impact on the cognitive assessment of the stressful situation (Jerusalem & Schwarzer, 1992; after Mitić, 2016). According to Bandura, the most effective way to strengthen self-efficacy is to witness the improved performance and development of the coping capacity for use in future situations (Bandura, 1977), whereas mastery experiences gained in one situation can help infer our capabilities in other situations (Bandura, Adams, Hardy & Howells, 1980). According to Bandura, self-efficacy affects the decision to initiate a behaviour, the choice of effort, and persistence once the behaviour has been initiated. Bandura and Cervone (1983) argue that self-efficacy most likely affects performance in situations with performance feedback because, in an experiment designed to test this hypothesis, they observed consistent relations between self-efficacy and performance only where knowledge of performance was present. However, further research
has provided support for Garland’s cognitive mediation theory (1985) to explain the links between individual task goals and performance, where high performance expectancy can result in higher self-efficacy through various mechanisms (Garland, H., Weinberg, R., Bruya, L. & Jackson, A., 1988). Individuals who set high goals can develop performance strategies that facilitate the accomplishment of higher performance levels (Locke, Shav, Saari & Latham, 1981). Higher goals can lead to higher self-efficacy through wishful thinking (Jones, 1977), where individuals expect what they hope to accomplish. If the task goal is a picture, then it is cognitively available and can serve as an anchor (Tverski & Kahneman, 1974), which results in expectations of higher performance among individuals with higher goals (Garland, H., Weinberg, R., Bruya, L. & Jackson, A., 1988). Therefore, task goals have an influence on task performance, partially through their impact on self-efficacy. Lessening anxiety is also related to increased self-efficacy (Smith, 1989). In general, skills and strategies that maximise self-efficacy expectations should be taken into account in creating coaching and training programmes for athletes.

It has been determined that coping skills, together with self-efficacy, are a strong predictor of performance (Dar oglou, G., 2011), and are of the utmost importance in designing personal athletic development programmes, with the purpose of increasing motivation, engagement, resistance to failure and, indirectly, sport performance and the balance between personal and professional life (Cosma, G., Chiracu, A., Stepan, R., Cosma, A., Nanu, C. & Păunescu, C., 2020). In sports, common coping strategies include increased effort, search for social support, avoidance, wishful thinking, change in tactics, problem solving, confrontation, arousal and relaxation control, and planning. These and other coping strategies are an integral part of an athlete’s overall array of self-regulating actions that facilitate successful adaptation in high performance sport (Mellalieu, S. & Hanton, S., 2015).

Coping is a part of a complex process needed for successful adaptation, and it requires efficient cognitive, behavioural and emotional skills of self-regulation. Lazarus defined coping as constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person (Lazarus, 2000; after Cosma, Chiracu, Stepan, Cosma, Nanu & Păunescu, 2020). One critical aspect of the self-regulation process is coping. Although Carver, Scheier and Weintraub argue that “people do not approach each coping context anew, but rather bring to bear a preferred set of coping strategies that remains relativelyfixed across time and circumstances” (Carver, Scheier & Weintraub, 1989, p. 270), according to the view of other authors, this includes volitional decisions and actions to cope with demanding situations (Lazarus, 1999; Skinner and Zimmer-Gembeck, 2007; after Mellalieu & Hanton, 2015). In sport psychology, the most outstanding descriptions and definitions of coping include views of features, where they are classi-
fied according to their permanent coping styles (Penley, Tomaka & Wiebe, 2002; after Nicholls & Polman, 2007) and the process (transactional approach) that incorporates interactions between the internal and external demands, that is, beliefs of one’s self, goals and values, and the situation (Lazarus, 1999; after Nicholls & Polman, 2007). Mitić quotes the transactional approach of Endler and Parker (Endler & Parker, 1990; after Mitić, 2016), with three coping dimensions, or styles: problem (task)-oriented coping, emotion-oriented coping, and avoidance-oriented coping. Persons who use the problem-oriented coping strategy usually find it easy to adapt, whereas those who use emotion-oriented and avoidance-oriented coping strategies are less adaptive. Cognitive factors and strictly controlled emotions are a characteristic of task-oriented coping aimed at problem solving through cognitive restructuring and situational reconceptualisation. These strategies are used when a situation is perceived as changeable. When a situation is perceived as unchangeable, emotion-oriented coping strategies are used in order to lessen the stress through emotions, with no attempt made to change the situation (Mitić, 2016). Among athletes, the most common coping dimensions are coping with problems and coping with emotions (Nicholls & Polman, 2007; Crocker, Kowalski & Graham, 1998). Less effective forms of coping with stress lead to dropping out of sports (Klint & Weiss, 1986; Smith, 1986; after Nicholls & Polman, 2007), a decline in performance (Lazarus, 2000a; after Nicholls & Polman, 2007), and the termination of one’s professional sport career (Holt & Dunn, 2004a; Nicholls & Polman, 2007), which is why it is important for both researchers and coaches working with athletes to better understand coping with stress in sport (Nicholls & Polman, 2007).

Until the 1990s, only few studies demonstrated how much programmes for enhancing coping capacity contributed to overall self-efficacy. However, it is assumed that the most effective conditions among those that can change the level of self-efficacy are the coping experiences that indicate efficient coping behaviours. According to Bandura (Bandura, 1977), the most effective way to strengthen self-efficacy is to witness the improved performance and development of the coping capacity for use in future situations. A number of studies have reported an increase in the internal locus of control in participants who were exposed to interventions designed to help them gain new behavioural competencies (Smith, 1970; Stein & Vallston, 1983; Duckworth, 1983; after Smith, 1989), which is a construct that has a certain degree of conceptual overlapping with general self-efficacy. Smith (Smith, 1989) noticed that previous positive findings regarding the locus of control variable indicate that coping skills training can lead to an increase in general self-efficacy, as well as a shift to the internal locus of control. He argues that higher gains can be expected in generalised self-efficacy rather than in the internal locus of control, to an extent in which the measurement of self-
efficacy is explicitly focused on the measurement of perceived behavioural skills. In his study, conducted on a sample of test-anxious college students, he found that coping skills training that can be generalised results in changes in self-efficacy that go beyond the situations at which specific training programmes are aimed. These findings helped him identify the factors that increase generalised self-efficacy expectancies and influence the stability of such changes, and provide implications and guidelines for further research concerning the effects of coping mechanisms on self-efficacy, which have found their way into practice and confirmed a two-way influence of self-efficacy and coping mechanisms in contextual conditioning.

The Problem and the Aim of the Research

The research problem is related to whether and how, i.e. to what extent, coping mechanisms predict self-efficacy in adolescent athletes. The aim of this research was to examine and determine the predictive relationship between coping mechanisms and self-efficacy in adolescent athletes.

Hypotheses

This research began with the following hypotheses: (H0) there is a statistically significant model of coping mechanisms that can predict self-efficacy in adolescent athletes; (H1) task orientation as a stress coping modality predicts higher self-efficacy in adolescent athletes; (H2) focusing on emotions as a stress coping modality predicts lower self-efficacy in adolescent athletes; and (H3) avoidance orientation (Avoidance and Distraction) as a stress coping modality predicts lower self-efficacy in adolescent athletes.

METHOD

Sample

The structure of the respondents who participated in this research is presented according to gender. The sample of respondents included in this research consists of 167 adolescent athletes, of whom 90 are boys, and 77 are girls. The respondents voluntarily agreed to be interviewed.

Instruments

The questionnaire used was CISS (Endler & Parker, 1990), and more specifically its adaptation by Sorić and Proroković (Sorić & Proroković, 2002). It consists of 48 items to which respondents give answers through a five-point Likert-type scale. There are three subscales: Problem-Focused Coping, Emotion-Focused Coping and Avoidance, which
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has its own two subscales (Distraction and Social Diversion). The instrument reliability in this research was verified by calculating Cronbach’s alpha coefficient, which is as follows, by subscales: Problem-Focused Coping (16 items, reliability coefficient of 0.78), Emotion-Focused Coping (16 items, reliability coefficient of 0.85), and Avoidance (16 items, reliability coefficient of 0.85), with Distraction (8 items, reliability coefficient of 0.77) and Social Diversion (5 items, reliability coefficient of 0.75). For the entire questionnaire containing 48 items, the reliability coefficient is 0.85.

The instrument for assessing self-efficacy is the Generalized Self-Efficacy Scale (GSE, Schwarzer & Jerusalem, 1995), which consists of 10 items. Respondents indicate the extent to which the statements apply to them on a five-point Likert-type scale (ranging from ‘not true at all’ to ‘completely true’). The instrument has previously demonstrated good reliability on different samples (Schwarzer, Basler, Kwiatek, Schroder & Zhang, 1997; Ivanov, 2002, as cited in Mitić, 2016). In this research, the Generalized Self-Efficacy Scale has a reliability coefficient of 0.83.

Procedure

The research was conducted in May and June 2022, in Serbia, on a sample of 167 respondents who voluntarily participated in the research. Some of the respondents completed a printed questionnaire, while others completed an online survey distributed via email and SMS. The written form of the test battery was converted into an electronic form, respecting the order of the given items as well as the degree of agreement with the statement. The purpose of the research and the involvement of the respondents were explained both orally and in writing (in the online form), and the procedure for answering different questions was described in detail at the beginning of each part of the questionnaire, and communicated personally before filling out the questionnaire. The respondents were also informed that their participation in the research was voluntary and could be terminated at any moment, and that their anonymity would be respected. By completing the questionnaire, the respondents gave their consent for the data they provided in the questionnaire to be used solely for research purposes.

Statistical Data Processing

Various statistical procedures were used to process the research data in accordance with the set goals and hypotheses. First, the significance of the correlation between coping mechanisms, on the one hand, and self-efficacy, on the other, was tested. For this purpose, the Pearson correlation coefficient was applied. Multiple regression analysis was used to test predictive effects, and to check whether and to what extent different stress management strategies predict self-efficacy.
RESULTS

Table 1. Descriptive statistics

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Efficacy</td>
<td>14</td>
<td>40</td>
<td>32.13</td>
<td>4.12</td>
</tr>
<tr>
<td>Task</td>
<td>39</td>
<td>78</td>
<td>58.06</td>
<td>7.44</td>
</tr>
<tr>
<td>Emotion</td>
<td>18</td>
<td>75</td>
<td>44.98</td>
<td>9.81</td>
</tr>
<tr>
<td>Avoid</td>
<td>26</td>
<td>75</td>
<td>51.54</td>
<td>10.79</td>
</tr>
<tr>
<td>Distraction</td>
<td>8</td>
<td>36</td>
<td>21.26</td>
<td>6.39</td>
</tr>
</tbody>
</table>

The distribution of variables in the research shows that the most prevalent coping mechanisms are task orientation and avoidance, which has the highest variability (SD 10.79). It is followed by orientation to emotions, while distraction is the least represented. The average value for self-efficacy is 32.13, with a standard deviation of 4.12.

Table 2. Correlation between self-efficacy and coping mechanisms

<table>
<thead>
<tr>
<th></th>
<th>Task</th>
<th>Emotion</th>
<th>Avoid</th>
<th>Distraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-efficacy</td>
<td>.536</td>
<td>-.128</td>
<td>.120</td>
<td>.086</td>
</tr>
</tbody>
</table>

One statistically significant positive correlation of high to moderate intensity was obtained. When there is a higher task-focused coping mechanism, self-efficacy will also be higher. Other correlations are low. What is also interesting is the negative relation between the emotion-focused coping mechanism and self-efficacy in young athletes.

Hypotheses Check

Table 3. Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>F(df, 154)</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.535*</td>
<td>.286</td>
<td>.267</td>
<td>15.423</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Predictors: (Constant), distraction, task, emotions, avoiding

A statistically significant model was obtained that can predict 28.6% of the variance in the criterion on the sample of respondents.

Table 4. Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>β</th>
<th>T</th>
<th>sig.</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>6.882</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>task</td>
<td>.516</td>
<td>7.207</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>emotions</td>
<td>-.168</td>
<td>-2.354</td>
<td>.020</td>
</tr>
<tr>
<td></td>
<td>avoiding</td>
<td>-.072</td>
<td>-.429</td>
<td>.669</td>
</tr>
<tr>
<td></td>
<td>distraction</td>
<td>.127</td>
<td>.765</td>
<td>.445</td>
</tr>
</tbody>
</table>
Task-focused and emotion-focused coping mechanisms were identified as statistically significant predictors. Self-efficacy is higher in athletes with higher task-focused coping, and lower in emotion-focused coping.

**DISCUSSION**

As it was hypothesised, our research proves the connection between self-efficacy and coping styles, as well as their predictive relationship, which was demonstrated by a statistically significant model that explained 28.6% of the variance in the criterion in the sample of respondents. The findings proved the research hypothesis H0. The results regarding the relationship between stress coping strategies and self-efficacy have proven hypotheses H1 and H2, and show that problem-oriented stress coping has a statistically significant (positive) relation with self-efficacy, while emotion-oriented coping has a negative relation with self-efficacy. Avoidance and distraction did not show any statistical significance in the prediction of self-efficacy, thereby disproving hypothesis H3 which states that avoidance-oriented mechanisms (Avoidance and Distraction) are predictors of lower self-efficacy. Previous research has also proved the relationship between self-efficacy and coping styles (Haney & Long, 1995, after Nicholls & Polman, 2007). Coping, as a critical factor in performance and satisfaction, has the potential to significantly contribute to applied practice (Lazarus, 2000). Problem-oriented coping strategies include problem definition, search for different ways of problem solving, and making decisions on definite actions with the purpose of changing the stressful situation, whereas emotion-oriented coping strategies include actions such as seeking emotional support, relaxation or meditation, and wishful thinking (Lazarus & Folkman, 1984).

Given that self-efficacy has been proven to be one of the key factors of success, our findings indicate that it is essential to develop capacities for defining problems, finding alternatives, decision making and taking actions directly related to problem solving by teaching and training athletes. When selecting sports candidates, it is also important to pay attention to preferred coping styles, which can predict their self-efficacy and, thus, success and satisfaction.

The results of this study are limited and refer to the research sample, but they could encourage further research on the predictive relationship between coping mechanisms and self-efficacy in athletes.

**CONCLUSION**

This research studied different strategies for coping with stressful situations in adolescent athletes of different genders, and the prediction of
self-efficacy in relation to them. The general goal of the research was to examine and determine the predictive relationship between coping mechanisms and self-efficacy in adolescent athletes. The formulation of one general hypothesis and three specific hypotheses was the starting point for operationalisation. The sample of adolescent athletes included 167 participants (90 boys and 77 girls). The most important conclusions to be drawn from the research findings include a statistically significant model that explained 28.6% of the variance in the criterion in the sample of respondents. Task- and emotion-oriented coping mechanisms were identified as statistically significant predictors. Self-efficacy was higher in athletes with higher task orientation, and lower in those with emotion orientation.

REFERENCES


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ПРЕДИКТИВНИ ОДНОС КОПИНГ МЕХАНИЗМА И САМОЕФИКАСНОСТИ КОД СПОРТИСТА АДОЛЕСЦЕНАТА

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Резиме

У психологији спорта, управљање изазовима је од кључног значаја за успех и благоствање спортиста. Самоефикасност, као један од најважнијих карактеристика успешних спортиста, важан је фактор стратегија у креирању обука и тренинга за развој вештина, селекцији спортиста, истрајавању у професионалној оријентацији и њиховој сатисфакцији. Континуирано управљање изазовима који се стално мењају и способност спортиста да се несе са стресорима су важни фактори њиховог успеха, перформанса и просперитета како у професионалном, тако и у приватном животу. Истраживања о утицају копинг механизама на самоефикасност почињу да се развијају деведесетих година. Резултати истраживања су указали на то да спортисти преферирају сукцесивне механизме превладавања који се односе на умереност на проблем када се ситуација перцептира као променљива, и умереност на емоције и контролу стреса када се ситуација перцептира као непромењива. Избегавајући механизми предвиђају неистраженост и одустање од ове професионалне орентације, и нису карактеристични за професионалне спортисте. Овим експлоративним истраживањем фокусирали смо се на проблем који се односи на то да ли и на који начин, односно у којој мери, копинг механизми предвиђају самоефикасност код спортиста адолесценаата са циљем да се испита и утврди предиктивни однос копинг механизама и самоефикасности. Укупан број испитаника који су учествовали у истраживању износи 167 спортиста адолесценаата, од којих је 90 мушког, а 77 женског пола. Варијабле истраживања су операционализоване аделативним инструментима. Инструмент за процену самоефикасности је Скала генерализоване самоефикасности (GSE, Schwarzer & Jerusalem, 1995), док је за процену стилова превладавања коришћена адаптација ЦИСЕ Ендлера и Паркера (The Coping Inventory for Stressful Situations, Endler & Parker, 1990), коју потписују Сорић и Пророковић (Сорић & Пророковић, 2002). Статистичке технике за обраду података коришћене у истраживању су Пирсонов коефицијент корелације и вишеструког регресионог анализа. Најважнији закључци који проницну из резултата истраживања укључују статистички значајан мо-
дел којим је могуће предвидети 28.6% варијансе у критеријуму на узорку испитаника. Као статистички значајни предиктори издвојили су се копинг механизми усмерени на задатак и на емоције. Самоэффикасност је већа код спортиста са вишем усмерењем на задатак, а мања код усмерености на емоције.