Original Article

Impact of coping strategies on sport performance

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Abstract:

Introduction. Achieving performance in sport depends on many factors other than physical, technical, or tactical training. Frequently, a strong mindset and stress resistance can make a difference between equal opponents. **Objective.** This study aimed to identify the links between sports performance and athletes' coping strategies. **Materials and Methods.** A total of 36 athletes (17 females and 19 males, aged 25 ±4 years) were recruited and completed *The Athletic Coping Skills Inventory – 28(ACSI)*. The athletes from the target group were volleyball and handball players. As a level of performance, 11 athletes won the last national championship, 8 athletes were in the top 6 ranked teams, and 17 athletes finished the competition in 7–12th place in the national championship. Program IBM SPSS, v.24 was used to analyse the data. In this study, the reliability coefficient Cronbach Alpha was $\alpha = .84$. **Results.** The results of data analysis showed that the most strongly represented coping strategies were freedom from worry and coachability, and the least represented coping strategies were peaking under pressure and coping with adversity. In our study, males were more able to set goals and ways to accomplish their tasks than females and were also more mentally prepared for situations that could cause problems or difficulties. Unlike women, men have a higher level of confidence in their abilities and a higher level of motivation to deal with stressful situations. Significant differences for males and females were found regarding the goal setting, mental preparation, confidence, and achieving motivation ($p=.014$). **Conclusions.** The obtained results can serve as the basis for the development of psycho-education programs for athletes and coaches to increase their awareness of the importance of psychological training.

KeyWords: sport, stress, education, athletes

Introduction

In a competition, there are many times when athletes of all levels and from every sport must not only overcome physical fatigue but also cope with psychological pressure and unpleasant emotions (Theodosiou et al., 2018). Athletes' coping skills are important determinants of performance; these skills should be trained, taught, and improved because they can directly affect the personal and professional lives of athletes. Regarding the mental health of performance athletes, they can face problems related to their own capabilities and performance that overlap with the problems of everyday life.

The coping skills of performance athletes have been studied in numerous studies. Thus, it has been observed that coping skills are associated with various mental variables such as performance (Mahoney, 1989) or vulnerability to accidents (Hanson, McCullagh, & Tonymon, 1992). At the same time, coping skills are essential when planning personal development programs for athletes, with the aim of increasing motivation, involvement, resilience to failures and, implicitly, sports performance and balance between personal and professional lives.

Owing to the nature of their activity, athletes are confronted with many stressful situations. During competitions they can feel fear, pain, lack of confidence, fear of failure, and fear of coach. During training, they may experience severe pain or fatigue, uncertainty, or exhaustion. Their inability to cope with these stressors is an important factor leading to failure and diminishing performance (Lazarus, 2000). Therefore, the literature in sports psychology unanimously agrees that athletes must have and use adaptive coping strategies to cope with the issues they face. Lazarus has 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" (p.141). Athletes have numerous coping strategies to deal with stressful situations. Crocker, Kowalski, & Graham (1998) have determined that the most common strategies are problem-focused or emotion-focused strategies. Problem-focused coping strategies aim to alter the stressful situation, while emotion-focused coping addresses the emotional distress associated with the situation (Lazarus & Folkman, 1984). Krohne (1993) has observed that avoidance and confronting are the strategies that are most frequently used by athletes.

Avoidance strategies include both behavioural avoidance (withdrawal from the situation) or psychological avoidance (cognitive problem solving). Confronting strategies refer to directly approaching the source of stress and attempting to annihilate or reduce it (actions, increased effort, planning) (Roth & Cohen, 1986). Appraisal-focused coping refers to reassessing the situation to diminish its importance or severity (Cox & Ferguson, 1991).

Hypotheses

H1. There are statistically significant differences regarding coping strategies depending on gender.

H2. There are statistically significant differences regarding coping strategies depending on performance level.

Materials and methods

Participants

The study included 36 athletes between 19 and 34 years of age ($M=25.06 \pm 4.56$ years). There were 19 males, 17 females, 16 handball players, and 20 volleyball players; all of them play in the Romanian National Championship, first division. Regarding the performance level, 11 of them won the last national championship, 8 of them had good performance (top 6 teams), and 17 of them finished the last annual competition by ranking 7–12 places.

Instruments

Athletic Coping Skills Inventory – 28 (ACSI). This instrument was developed in 1980s on the basis of a theoretical model, which offered causal roles to the factors of life stress, social support, and psychological coping skills (Smith & Small, 1990). The initial version of ACSI consisted of 87 items. In this study, we used the 28-item version (Smith, Smoll, Schutz, & Ptacek, 1995). The items were organized into seven subscales, four items each: coping with adversity, peaking under pressure, goal setting/mental preparation, concentration, freedom from worry, confidence, achievement motivation, and coachability. The participants responded to each item on a 4-point scale: 0 – almost never, 1 – sometimes, 2 – often, 3 – almost always. Item example: "I handle unexpected situations in my sport very well". The reliability coefficient Cronbach Alpha in our study was $\alpha = .84$.

Data collection and research design

This is a cross-sectional exploratory study. The participants were able to understand and sign the written informed consent prior to data collection. The subjects had a short session of questionnaire completion (10 min). The data were anonymized, checked, and exported into SPSS.24 (IBM Corp, 2016).

Results

In Table 1, the highest scores were obtained for freedom from worry ($M = 11.17$, $SD = 2.81$) followed by coachability ($M = 11.06$, $SD = 2.47$). The lowest scores were obtained for peaking under pressure ($M = 6.28$, $SD = 2.43$) followed by coping with adversity ($M = 7.61$, $SD = 2.33$).

Table 1. Means, standard deviations, skewness, and kurtosis for ACSI

	Min.	Max.	M	SD	Skewness	Kurtosis
Coping with adversity	3	11	7.61	2.33	-.599	-.279
Peaking under pressure	0	11	6.28	2.43	-.494	.107
Goal setting, mental preparation	2	12	8.25	2.73	-.707	.064
Concentration	4	11	7.81	2.23	-.086	-1.287
Freedom from worry	5	16	11.17	2.81	-.425	-.243
Confidence and achievement motivation	4	12	8.64	2.03	-.148	-.378
Coachability	5	14	11.06	2.47	-.716	.170

H1. There are statistically significant differences regarding coping strategies depending on gender.

To test the H1 hypothesis, we used the Mann–Whitney U test (Tables 2 and 3).

Table 2. Mean ranks for coping strategies depending on gender

	Gender	N	Mean Rank	Sum of Ranks
Coping with adversity	Males	19	19.82	376.50
	Females	17	17.03	289.50
	Total	36		
Peaking under pressure	Males	19	20.79	395.00
	Females	17	15.94	271.00
	Total	36		
Goal setting, mental preparation	Males	19	22.53	428.00
	Females	17	14.00	238.00
	Total	36		
Concentration	Males	19	16.55	314.50
	Females	17	20.68	351.50

	Total	36		
Freedom from worry	Males	19	19.42	369.00
	Females	17	17.47	297.00
	Total	36		
Confidence and achievement motivation	Males	19	22.00	418.00
	Females	17	14.59	248.00
	Total	36		
Coachability	Males	19	19.55	371.50
	Females	17	17.32	294.50
	Total	36		

Table 3. *Mann–Whitney U test for gender differences regarding coping strategies*

	Goal setting, mental preparation	Confidence and achievement motivation
Mann–Whitney U	85.000	95.000
Wilcoxon W	238.000	248.000
Z	–2.447	–2.138
Asymp. Sig. (2-tailed)	.014	.033

Although there are gender differences in coping strategies, not all differences are statistically significant. Out of the seven strategies, significant differences are recorded only for goal setting, mental preparation (Mdn = 22.53 for males and Mdn = 14.00 for females, $U = 85.00$, $p = .014$) and for confidence and achievement motivation (Mdn = 22.00 for males and Mdn = 14.59 for females, $U = 95.00$, $p = .033$).

Considering these results, we can say that hypothesis H1 is only partially supported by the data.

H2. There are statistically significant differences regarding coping strategies depending on performance level.

To test the H2 hypothesis, we used the Kruskal–Wallis H test (Tables 4 and 5).

Table 4. *Mean ranks for coping strategies depending on performance level*

	Performance level	N	Mean Rank
Coping with adversity	Low performance	17	21.44
	High performance	8	12.56
	National champions	11	18.27
	Total	36	
Peaking under pressure	Low performance	17	19.24
	High performance	8	11.63
	National champions	11	22.36
	Total	36	
Goal setting, mental preparation	Low performance	17	19.24
	High performance	8	13.88
	National champions	11	20.73
	Total	36	
Concentration	Low performance	17	18.59
	High performance	8	17.38
	National champions	11	19.18
	Total	36	
Freedom from worry	Low performance	17	20.76
	High performance	8	13.13
	National champions	11	18.91
	Total	36	
Confidence and achievement motivation	Low performance	17	20.91
	High performance	8	13.63
	National champions	11	18.32
	Total	36	
Coachability	Low performance	17	23.76
	High performance	8	13.00
	National champions	11	14.36
	Total	36	

Table 5. *Kruskal–Wallis H test for coping strategies differences depending on performance level*

	Coachability
Kruskal–Wallis H	8.340
df	2
Asymp. Sig.	.015

Although there are differences in coping strategies depending on performance level, not all of these differences are statistically significant. Out of the seven strategies, significant differences are recorded only for coachability, $Mdn = 13.00$ for high performance athletes, $Mdn = 14.36$ for national champions, and $Mdn = 23.76$ for low performance athletes, $H(2) = 8.340$, $p = .015$

Considering these results, we can say that hypothesis H2 is only partially supported by the data.

Discussion

First, coping strategies used by athletes show that they manage to remove their concerns during important competitions or important life situations, or even confront issues specific to everyday life. Second, athletes rely on their coach or mentor, using his advice and help to overcome stressful situations. Athletes consider to an exceedingly small extent that playing or training under pressure can be a challenge for them, but rather it is an extra stress. In addition, athletes say that they cannot cope with stressors by relaxing or detaching during the situation; in addition, they are unable to remain positive and emotionally stable when confronted with stressful situations.

The H1 hypothesis was only partly supported by the data because there were gender differences in coping strategies but only in terms of goal setting, mental preparation, and confidence and achievement motivation. Thus, males are better able to set their goals and establish modalities to accomplish their tasks than females and are also more mentally prepared for situations that may generate problems or difficulties. Ivaskevych et al. (2019) have observed the existence of a gender gap in competitive anxiety and combat strategies in handball players. In addition, unlike females, males have a higher level of confidence in their own capabilities and a higher level of motivation in dealing with stressful situations. Other studies have shown that male athletes frequently use a task-oriented style to deal with stress and less frequently use a style of avoidance than general population (Bojkowski et al., 2020).

The H2 hypothesis showed that in terms of coping, coachability (i.e., the need to obtain advice and support from coach or a mentor) is most frequently used by the low performance athletes, followed by national champions, and barely used by high-performance athletes. Athletes, who are national champions, may face problems that may be related to their position, for which they need guidance to manage subsequent relationships or stressful situations that accompany the position and title of champion. Those less eager to seek help from a coach or a mentor are high-performance athletes, who have exceeded the level of low performance but have not yet become champions, which makes them less vulnerable to stressful situations.

For an athlete to achieve performance in competition, it is essential that he/she remains calm in stressful situations (Géczi et al., 2008; Smith et al., 1995). The athletes in our study demonstrated that they possessed such abilities; without these abilities, they could not reach the required level of performance. However, stressful situations are different, and some coping modalities may be, at some point, no longer useful; thus, the athletes must constantly improve their coping strategies. Thus, it is recommended to intervene with the help of personal development programs.

Despite any help they receive, there are moments when athletes cannot achieve an excellent level of performance in stressful situations, and their performance is not related to the results of training (Omar-Fauzee et al., 2014; Smith et al., 1995).

Several researches (e.g., Nicholls et al., 2007) have concluded that high performance athletes, regardless of the modality, are more efficient in using coping strategies. Mahoney, 1997, in a sample of 713 athletes from 23 US sports of different competitive levels has identified greater psychological competences in those who have attained sports success.

A research conducted in Slovakia, which included 40 ice hockey players (Kaplánová, 2019), has shown that the level of coping strategies to manage stress varies according to the level of self-esteem and level of anxiety of the players. The main findings of the study showed that, through proper interventions conducted by coaches and sport psychologists, anxiety could be reduced, and self-esteem could increase. These results agree with our findings.

It is considered that emotions energize, control, and regulate human actions. Therefore, it is necessary to take them into consideration to manage each individual's performance and make decisions related to them (Schutte et al. 2009). Emotions can be used to orientate the thinking and behaviours associated with the perception and feeling of effectiveness and in the field of professional life, in achieving career goals, in reaching performance, and in the more facile adaption to different stressful contexts. (Brown, George-Curran & Smith, 2003; Schutte, Malouff & Bhullar, 2009).

Concrete experiences represent the most influential source of efficacy because they are based on authentic actions. Each successfully completed task leads to even more difficult tasks. The situations must be structured in such a way to lead to success and to avoid successive failures. To gain initial success, the person must break down difficult tasks into achievable tasks. (Heslin & Klehe, 2006). Once positive results appear, self-efficacy will also tend to generalize in other situations, especially for situations that are similar to the initial situations that the individual has already mastered well.

Bandura (1986) has argued that failures that are countered by consistent efforts can lead to gaining experience and implicitly to increasing effectiveness.

Conclusions

Physical exercise has some positive effects on emotion intelligence (Cosma et al., 2017). Even for professional athletes, there are things that can be optimized. The obtained results showed that the athletes in our study group felt a more reduced need of peaking under pressure and coping with adversity. In reality, these coping strategies may change their performance and help align their own needs with the needs and objectives of the team. Sport managers can benefit from training courses and professional development with the aim of adapting the team to such tendency. At the same time, athletes can participate in classes to extend the horizons of lateral thinking to help them differentiate between different coping strategies.

This study may be the beginning of a large-scale research involving more performance athletes or even athletes who are still in the preparatory phase. At the same time, the obtained results can serve as the basis for the development of psycho-education programs for athletes and coaches.

Conflict of Interest. The authors declare that there is no conflict of interest.

Authors contributions:

Each author made substantial and equal contributions to the acquisition, analysis, and interpretation of the data.

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