Original Article

Selected psychological factors in elite Greco-Roman wrestlers at various levels of competition

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Abstract:

Due to the deterioration in mental health in the societies and, in view of significant challenges of contemporary sport, it is necessary to carry out research on psychological factors and, based on research results, to hold interdisciplinary discussions about the role of mental preparation in sport. It is suggested that psychological resources, i.e. psychological factors that determine optimal performance in sport and in other activities not related to sport, should be enhanced. These factors include, inter alia, styles of coping with stress (coping styles) and achievement motivation. The aim of the study was to investigate selected psychological factors (including achievement motivation and coping styles) in wrestlers at various levels of competition. This study sought to explore selected psychological factors in wrestlers at various levels of competition. The study included elite Greco-Roman wrestlers from two age groups: juniors (n = 25) and seniors (n = 25). The first group consisted of athletes aged 16-18 and with training experience of 4 to 10 years. The other group was composed of athletes 19-26 years of age and with training experience of 5 to 17 years. CISS and LMI inventories were applied. Dimensions of achievement motivation and different coping styles were analysed. Compared to juniors, seniors exhibited more developed task-oriented coping style. Furthermore, they were more self-confident. In seniors, task-oriented coping style correlated positively with a general dimension of achievement motivation and self-confidence; however, emotion-focused coping style correlated negatively with a general level of achievement motivation and self-control. In addition, a negative correlation was noted between self-control, avoidance coping style and distraction. In juniors, achievement motivation and ambition correlated positively with task-oriented coping style. In the future, it would be useful to carry out longitudinal studies to check possible age- and experience-related changes in the use of certain coping styles as well as dimensions of achievement motivation in particular groups. The process of training in elite wrestlers requires constant cooperation with sports psychologists in terms of monitoring psychological variables (e.g. achievement motivation and coping styles) and, if necessary, implementing sport-specific mental training. Further research is needed to investigate psychological factors in wrestling more thoroughly. However, the data gathered may be used when developing mental training oriented at elite wrestlers.

Key words:sports psychology, mental preparation, stress, achievement motivation, combat sport, athletes

Introduction

In view of the information regarding mental health of athletes, a debate takes place about the need to develop guidelines of care (including psychological assistance) provided to sportspeople [Chang, et al., 2019]. It is particularly important due to the fact that some issues and difficulties occur during a sports career. During this period, athletes train to become champions but they also improve their life skills that enable them to fend for themselves in other circumstances, e.g. personal and family life, education or work [Akesdotter, Kentta, Eloranta, & Franck, 2019]. Therefore, it is worth investigating how athletes (elite ones in particular) function in psychosocial terms [Zakrajsek, Raabe,& Blanton,2019]. A broader understanding of their functioning may be helpful in comprehending how humans function in the 21st century. Primarily, it may help to develop an adequate support system that would also take into account mental health [Smolianov, Dolmatova, Smith, Morrisette, Schoen, El-Sherif,& Dion, 2020]. There is a clear analogy between an athlete and a human being that rises to challenges posed by the new century, i.e. specialising in a specific area, being capable of adapting fast, coping with stress in a proper manner, achieving good results, being ready to take on new challenges, etc.

It is necessary to pay attention to psychological resources that determine coping with difficult situations/life in an optimal manner. Hence, researchers attempted to analyse styles of coping with stress (coping styles) and dimensions of achievement motivation in elite athletes. They treated these variables as resources needed for effective functioning, also in the field of sport. Achievement motivation helps not only to accomplish higher goals but also to keep being involved in sport [Gardner, Vella, & Magee, 2017]. It is significant in the

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context of changes observed among adolescents as well as experienced athletes, i.e. walking away from sport (for various reasons). Achievement motivation means pursuing one's goals and ambitions and, simultaneously, being ready to fend for oneself [Klinkosz, & Sękowski, 2013; Teodorescu, Butu, & Catuna, 2017]. Its manifestations may constitute an element of the style of coping with stress. This style involves certain ways of reacting demonstrated by an individual. It is also defined as a tendency to follow particular patterns of behaviour/activities/experiencing/thinking in stressful situations that makes it possible to maintain balance between capabilities or resources of an individual and environmental demands [Anshel, & Anderson, 2002; Strelau, Jaworowska, Wrześniewski, & Szczepaniak, 2005].

With regard to the process of professionalization of wrestling in Poland, extensive research that involves various factors determining performance and influencing the quality of training is carried out. Wrestling requires conducting thorough research due to specific requirements of this sport [Manolachi, 2019] and because of its historical values as well as ideas behind it. The current study presents a significant part of the research on selected psychological factors. Recognising psychological factors of mental functioning of wrestlers will make it possible to better learn their training-related needs and, as a result, to develop adequate wrestling-specific mental training. It will help to achieve better psychological results in the future and, at the same time, it will ensure more effective performance in sport as well as in other activities not related to sport.

Therefore, the aim of the study was to investigate selected psychological factors (including achievement motivation and coping styles) in wrestlers at various levels of competition.

Materials&Methods

Participants

Two groups of elite Greco-Roman wrestlers took part in the study. The first group consisted of juniors ($n = 25$) aged 16-18 ($M = 17.72 \pm 0.61$) and with training experience of 4 to 10 years ($M = 6.84 \pm 1.99$). The other group was composed of seniors ($n = 25$) 19-26 years of age ($M = 21.40 \pm 2.20$) and with training experience of 5 to 17 years ($M = 9.28 \pm 2.81$).

Procedure

Coping Inventory for Stressful Situations (CISS) and Achievement Motivation Inventory (Leistungsmotivationsinventar – LMI) were employed in the study:

1/ CISS was applied to determine coping styles used by the wrestlers. The analysis involved five dimensions (scores on scales) referring to the following styles: TOC – task-oriented coping style – refers to task-oriented efforts aimed at solving the problem, attempting to alter the situation or cognitively restructuring the problem; EFC – emotion-focused coping style – describes emotional reactions which are self-oriented – the aim is to reduce stress related to a difficult situation through daydreaming or fantasizing; AC – avoidance coping style – refers to activities which make it possible to avoid experiencing or thinking about stressful situations. Within this style, two patterns of behaviour can be distinguished, i.e. distraction (D) and social diversion (SD) [Strelau, Jaworowska, Wrześniewski, & Szczepaniak, 2005].

2/ LMI, developed by Schuler, made it possible to diagnose achievement motivation. In a standard mode, the analysis refers to scores obtained from 17 scales. Having processed the data, the authors calculated the values of three factors: SC – self-confidence – a mean score obtained from the following scales: flexibility, independence, fearlessness, confidence in success, dominance, preference for difficult tasks, goal setting, eagerness to learn; A – ambition – the factor that included scores from the following scales: goal setting, eagerness to learn, compensatory effort, pride in productivity, status orientation, engagement, flow, competitiveness; S – self-control – refers to a mean score from the following scales: self-control, internality, persistence. Furthermore, an overall score (OS) obtained with the use of LMI was presented [Klinkosz, & Sękowski, 2013].

Statistical analysis

The scores of each study participant were converted into points with reference to norms developed for age categories (they can be interpreted according to the division into sten scores: low scores (1-4 sten), average scores (5-6 sten) and high scores (7-10 sten) [Strelau, et al., 2005], and ten scores: very low scores – 34 and less, low scores – 35-44, average scores – 45-55, high scores – 56-65, very high scores – 66 and more [Klinkosz, & Sękowski, 2013]. In order to compare the scores of juniors and seniors, the Kolmogorov-Smirnov test was applied. To assess correlations between the analysed psychological variables, Rho Spearman coefficient was used.

Results

Table 1 shows raw data (obtained with CISS and LMI) and converted results (CISS – within sten norms, LMI – ten norms). Compared to juniors, seniors achieved higher results in task-oriented coping style (seniors – high scores, juniors – average scores). In turn, juniors scored higher in emotion-focused coping style. Both groups (juniors and seniors) obtained average scores.

Table 1. Results of analyses of factors related to coping styles ($\bar{x} \pm SD$)

Tool	Scale	Juniors		Seniors		Z
		RD	CR	RD	CR	
CISS	TOC	56.44 $\pm$ 6.91	5.36 $\pm$ 1.52	62.44 $\pm$ 4.52	6.72 $\pm$ 1.24	1,56*
	EFC	45.92 $\pm$ 8.68	5.92 $\pm$ 1.44	38.28 $\pm$ 7.38	4.64 $\pm$ 1.38	1,70**
	AC	48.52 $\pm$ 9.66	5.40 $\pm$ 1.91	46.20 $\pm$ 11.90	4.80 $\pm$ 2.31	0,71
	D	21.28 $\pm$ 5.69	5.56 $\pm$ 2.00	20.24 $\pm$ 7.34	5.00 $\pm$ 2.50	0,85
	SD	18.24 $\pm$ 3.03	5.20 $\pm$ 1.53	17.84 $\pm$ 4.49	5.36 $\pm$ 2.14	0,47
LMI	OS	764.64 $\pm$ 77.34	52.44 $\pm$ 8.38	821.12 $\pm$ 71.49	58.00 $\pm$ 7.41	0,91

Key: OS – overall score, RD – raw data, CR – converted results; * - $p \leq 0.05$; ** - $p \leq 0.01$

The comparison of achievement motivation levels did not reveal significant differences even though achievement motivation of juniors was average, whereas that of seniors was high. In addition, seniors exhibited higher levels of self-confidence than juniors (tab. 2).

Table 2. Results of analyses of factors related to achievement motivation ($\bar{x} \pm SD$)

Factor	Juniors		Seniors		Z
	RD	CR	RD	CR	
SC	292.28 $\pm$ 35.57	48.71 $\pm$ 5.89	329.04 $\pm$ 37.96	54.84 $\pm$ 6.33	1,70**
A	421.08 $\pm$ 50.61	52.63 $\pm$ 6.33	433.96 $\pm$ 44.86	54.24 $\pm$ 5.61	0,71
S	155.32 $\pm$ 18.62	51.77 $\pm$ 6.21	168.80 $\pm$ 16.44	56.27 $\pm$ 5.48	0,99

Tables 3 and 4 show values of significant correlation coefficients of results obtained in the groups of juniors and seniors. A number of correlations were noted. Moreover, it was observed that in the group of juniors, an overall dimension of achievement motivation and ambition correlated positively with task-oriented coping style.

Table 3. Values of correlations between scores in the group of juniors

Rho		CISS					LMI	FACTOR	
		TOC	EFC	AC	D	SD	OS	SC	A
CISS	TOC						.51**		.64**
	EFC								
	AC				.94**	.72**			
	D					.50*			
	SD								
LMI	OS							.87**	.85**
FACTOR	SC								.56**
	A								
	S								

Table 4. Values of correlations between scores in the group of seniors

Rho		CISS			LMI			FACTOR	
		TOC	EFC	AC	D	SD	OS	SC	A
CISS	TOC						.43*	.46*	
	EFC				.43*		-.46*		
	AC				.93**	.77**			
	D					.53**			
	SD								
LMI	OS							.89**	.87**
FACTOR	SC								.68**
	A								
	S								

In the group of seniors, task-oriented coping style correlated positively with a general dimension of achievement motivation and self-confidence. Negative correlations were noted between emotion-focused coping style, an overall score for achievement motivation and self-control as well as between self-control, avoidance coping style and distraction.

Discussion

The findings of the present study can be explained in the following manner: athletes with longer experience and more sports achievements cope with stress better (adaptive task-oriented coping style prevails). The study included male participants only. It is worth noting that the results may be linked to their sex. The findings of other researchers confirm that such a profile is found in men [Bojkowski, Kalinowski,

Kalinowska, & Jerszyński, 2020]. Being able to cope with stress correlates positively with self-confidence and a general level of achievement motivation. It is in line with other research results obtained by the authors of the present work, i.e. adaptive coping style correlates with experience [Rutkowska, & Gierczuk, 2018]. Moreover, higher-level athletes display greater achievement motivation [Ong, 2019], which is partly confirmed by the results of the present study. Our findings also correspond to the results of the studies that focused on verifying correlations between motivation and other psychological resources which make it possible to use adaptive coping styles [Ntoumanis, Biddle, & Haddock, 1999, Kristiansen, Roberts, & Abrahamsen, 2008].

Other dimensions of coping styles correlate negatively with certain dimensions of achievement motivation. In the group of juniors, a positive correlation was also found between task-oriented coping style and an overall score for achievement motivation. Furthermore, a correlation between this style and ambition was revealed. It can be assumed that, regardless of athletes' age, an optimal style of coping with stress is linked with achievement motivation. In the case of older athletes, it is connected with self-confidence, whereas in younger competitors it is associated with ambition. The findings of the current study are consistent with the results of extensive research on the accuracy of the Polish version of LMI [Klinkosz, & Sękowski, 2013] as well as with another investigation conducted by the authors [Rutkowska, & Gierczuk, 2018], which confirms their diagnostic value. A significant issue in contemporary sport (including wrestling) is the problem of giving up training altogether [Curby, & Jomand, 2015, Witkowski, Masliński, Szalek, Cieśliński, & Migasiewicz, 2015, Laprade, & Murphy, 2017]. Studies show that achievement motivation helps to continue a sports career [Bukowska, & Marks, 2012, Gardner, & Vella, 2017]. First and foremost, it exerts a positive influence on engagement [Kristiansen, Roberts, & Abrahamsen, 2008]. It may also be assumed that individuals with high achievement motivation are aware of their psychological resources and competences [Springer, & Oleksa, 2017], which the authors of the current study associate with an adaptive style of coping with stress taking into account contemporary interactive theories of coping with stress [Strelau, Jaworowska, Wrześniewski, & Szczepaniak, 2005]. In this context, it is worth continuing research and verifying possible changes in the factors over the following years of athletes' careers. It would be interesting to carry out an international longitudinal study. There is reason to believe there exist intercultural/international differences in motivation levels [Chkhikvadze, & Bazan, 2018]. It is worth verifying it in the case of professional wrestling all the more since wrestling is a sport which is treated in a different manner depending on the country, i.e. its popularity and national traditions vary but it has common roots [Yard, & Comstock, 2008, Evangelos, 2012, Curby, & Jomand, 2015, Laprade, & Murphy, 2017, Türkmen, Gül, & Fişne, 2017]. The appearance of wrestling was the manifestation of the human need and creativity developed over the centuries depending on the place of living and living conditions. Wrestling skills are treated as the means that help to gain advantage over an opponent in a fight; therefore, they are often used for military purposes. Regardless of the place of training and purpose, it would be impossible to achieve high levels of wrestling skills without proper motivation [Kruszewski, 2004]. In the context of the place as well as community, the environment where training is taken up is linked to achievement motivation. Therefore, care for social and psychological security should be encouraged [Blynova, Krogulov, Semenov, Los, & Popovych, 2020].

The findings provide tips to coaches and sports psychologists on how to perform specific tasks oriented at developing adaptive styles of coping with stress and achievement motivation. Attention needs to be paid to the profile of achievement motivation, i.e. the arrangement of three factors. We need to reinforce the ones that include adaptive resources and help to cope with stress more effectively, i.e. ambition, self-confidence and self-control. However, to do so, it is necessary to implement professional sport-specific mental training and to diagnose and monitor psychological variables. Also, it is important to create a mastery climate [Engan, & Sæther, 2018]. It requires constant cooperation of coaches and athletes with sports psychologists. The inclusion of sports psychologists in training staff should become standard practice, and so should the continuation of research on variables that determine both the effectiveness of athletes in elite sport and their psychosocial well-being. It would make it possible to realise the principles of the International Society of Sport Psychology that stress the importance of health, sports results and continuation of healthy and sustainable development in and through sport [Schinke, Stambulova, & Moore, 2018]. In wrestling, such a training policy has also been recommended for years [Daniel, 2013, Rushal, 2005].

Conclusions

Significant differences were revealed in coping styles between juniors and seniors. Juniors manifested relatively more distinct emotion-focused coping style, while seniors demonstrated relatively more clear task-oriented coping style. Seniors were significantly more self-confident compared to juniors. In the future, it would be useful to carry out longitudinal studies to check possible age- and experience-related changes in the use of certain coping styles as well as dimensions of achievement motivation in particular groups.

Furthermore, a number of interesting (from the standpoint of theory and practice of psychological aspects of wrestling) correlations between the variables were noted. The process of training in elite wrestlers requires constant cooperation with sports psychologists in terms of monitoring psychological variables (e.g. achievement motivation and coping styles) and, if necessary, implementing sport-specific mental training.

Conflicts of interest

The authors declare no existing conflict of interest for the content of the article.

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