

An Investigation of the Effect of Elite Athletes' Self-Talk (Inner Speech) During Competition on Perceptions of Coping with Stress

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ABSTRACT

Aim: The study aimed to investigate the effects of the self-talk of the athletes of all ages in the Curling National Team during competition on their perception of coping with stress..

Methods: In the first part, questions for demographic characteristics were used for the participants. In the second part, the self-talk scale developed by Zervas, Stavrou, and Psychountaki (2007) consisting of 11 items, 2 sub-dimensions, and a 5-point Likert was used. The scale was adapted to Turkish by Engür in 2011. In the third part, the scale of coping with stress developed by Moos (1993), which consists of 24 items, 5 sub-dimensions, and a 5-point Likert type was used. It was adapted to Turkish by Ballı and Kılıç (2016). While the study population was composed of the athletes in the Curling National Team, the sample group consisted of 106 athletes, of which 46 were women and 60 men.

Results: The linear regression analysis reveals that the self-talk predicted 27% of the perceptions of coping with stress. The results also show that self-talk ($p=.896$) and the perceptions of coping with stress ($p=.377$) did not show any difference by the variable of gender. The findings by the variable of age indicate that the self-talk ($p=.053$) and the attitudes to cope with stress ($p=.005$) were statistically significant.

Conclusion: According to the results of the correlation analysis, a low level and a positive significant relationship were observed between self-talk and coping with stress ($r=.302$).

Keywords: Curling, Elite Athletes, Self-Talk, Coping With Stress

INTRODUCTION

When, in the 1880s, self-talk (internal speech) of people in a quiet or loud way began to receive increasing attention, researchers began to show an increased interest in it as well¹. In this sense, the studies and observations of Piaget and Vygotsky on children played an important role in that the concept of self-talk (internal speech) has been an area of interest of great importance in scientific circles. Piaget defined the talk-to-self of children speaking in a loud way as "egocentric speech"². On the other hand, developing this approach put forward by Piaget, Vygotsky introduced a socio-cultural theory, suggesting that children use self-talk (inner speech) in the process of their cognitive development, problem-solving abilities, and complex mental activities³. Self-talk (internal speech) consists of 4 dimensions, being Positive inner speech, Negative inner speech, Educational inner speech, and Motivational inner speech.

The concept of coping with stress is defined as the cognitive and behavioural efforts that people make to eliminate the difficulties they have to face in the inner or outer world, satisfy their needs in this respect, and control or reduce tensions⁴. Crocker, Kowalski, and Graham, on the other hand, define coping with stress as external or internal demands in the face of one's emotional, cognitive, and behavioural efforts¹⁸. The concept of coping with stress has been discussed in two dimensions as "coping strategies" and "coping styles".

Coping style is a broad concept of how a person responds uniquely to stressors. On the other hand, a coping strategy is a situational structure that shows how a person handles situations^{5,6}. This situational approach can manifest itself in different ways; using leisure time activities to overcome stress has been considered within the scope of coping strategy⁷.

In contemporary and developed societies, sports are now an integral part of life⁹. Along with the rapid development of technology and the increase of welfare level, the economic share for sports increases, leading, on the other side, to conditions of competition that get heavier, with athletes who have to struggle with the stress caused by this situation while trying to keep up with these developing conditions. Not being able to overcome the increasing psychological difficulties under the stress they experience, athletes who have good physical sportive skills can not reach appropriate performance levels or quit the sport. At this point, mental resilience stands out as being one of the important psychological structures, which would enable people to get rid of the pressure and stress experienced in sports³.

Akman, reports a positive relationship between the athletes' mental toughness levels and their inner speech styles. It is therefore suggested that positive self-talk by athletes to overcome the psychological difficulties and stress they experience will increase their mental endurance and motivation levels, paving the way to increased performance¹⁰. Weinberg, defines positive self-talk as a method that helps athletes only concentrate on the now, and not focus on past mistakes or future fears, but suggests that negative self-talk is self-humiliating, inappropriate, and counterproductive, and creates anxiety¹¹.

In contemporary approaches, self-talk is considered to be multi-dimensional, and it is suggested that self-talk can be characterized as teaching or motivation¹¹. While motivational self-talk involves confidence building, effort initiative, and positive moods, instructional self-talk rather involves attention and focusing, technical knowledge, and tactical choices.

Dana (2016) and Dana et al (2016) stated

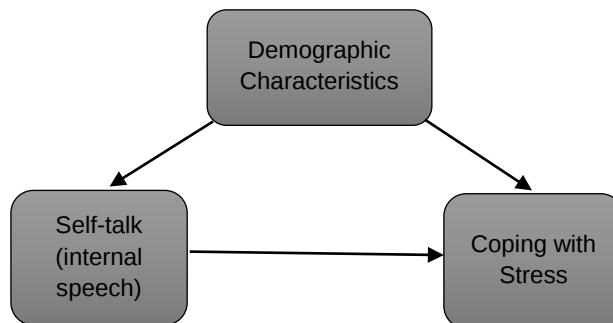
instructional and motivational self-talk with three repetitions significantly deteriorated dart throwing. In other word, repetitions of self-talk had a negative effect on dart throwing performance that could be probably due to the paralysis of analysis and apparent use of the rules.^{23, 24}

In this respect, the present study was conducted to determine the inner speech levels of elite athletes and their level of coping with stress and to investigate the effects of the inner speech levels of the athletes on their mental and physical readiness during competition and on their perception of coping with the stressful situations caused by the excitement and environmental effects in a competition.

The study aimed to investigate the effects of the self-talk of the athletes of all ages in the Curling National Team during competition on their perception of coping with stress. A further aim of the study was to investigate whether the athletes' inner speech and the styles they use to cope with stress showed any difference by the variables of gender, age, educational background, and length of career in the sport.

The present study is important in terms of examining the internal speech levels of successful elite athletes concerning the stressful situations that influence their decisions and performances during competition and making recommendations in this direction.

Study Model and the Hypotheses of the Study: Before creating a model, variables were determined. There are 2 variables in the model, of which the self-talk and the perception of coping with stress intention were selected as independent variables.



The Study Population and Sample: The study population consisted of athletes of all ages who made up the Curling National Team in 2020. The sample, on the other hand, was composed of 106 athletes, of which 46 were women, and the rest were men.

Data Collection Tools: After the researcher met with the authorized persons in the workplaces where the scales would be administered and obtained the required permissions, the scales were explained to the employees in the premises of the institutions and organizations involved. The researcher helped the employees to answer the questions. The scale form consisted of three parts.

Personal Information Form: The personal information form included the questions prepared by the researcher to determine the variables such as age, gender, educational background of the participants, and length of career in the sport.

Self-Talk Questionnaire: The Self-Talk Questionnaire (S-

TQ) was created by Zervas, Stavrou, and Psychountaki (2007). The scale consists of 11 items and two sub-dimensions, being the cognitive and motivational dimensions. The scale designed in a 5-point Likert type was adapted into Turkish by Engür (2011). The Cronbach's alpha values of the internal consistency of the scale were set at (α): 96 for the dimension of self-talk, (α): 95 for that of motivational function, and (α): 91 for the dimension of cognitive function. The total Cronbach's alpha value obtained in our study was found to be (α) = .93.

The scale of Coping with Stress: The scale of coping with stress designed in a 5-point Likert type developed by Moos (1993) consists of 24 items and four dimensions, being logical analysis, positive evaluation, support seeking, and problem-solving. It was adapted to Turkish by Ballı and Kılıç (2016). The Cronbach's alpha values of the internal consistency of the scale were (α): 91 for the sub-dimension of problem-solving, (α): 91 for that of positive evaluation, (α): 91 for logical analysis, (α): 80 for professional support and (α): 73 for seeking for environmental support. The total Cronbach's alpha value obtained in our study was found to be (α) = .90.

Analysis of Data: The data obtained from the participants were subjected to various statistical analyses through SPSS v22.0 software. A normality test was performed to determine the conformity of the obtained data to a normal distribution, which revealed that the data were suitable for normal distribution. Parametric tests were administered in our study. To determine the demographic variables of the participants, the t-test was used in independent groups to compare the self-talk and coping with stress during competition according to variables such as frequency analysis, gender, and educational background. While, on the other hand, a one-way analysis of variance was used in comparing age and length of career in the sport, the Tukey test was administered to find out which groups showed the difference, and the level of significance was set at $p < 0.05$.

RESULT

Table 1: Demographic Information of the Participants

		(N)	(%)
Gender	Men	60	56,6
	Women	46	43,4
Educational Background	High School	54	50,9
	Bachelor's Degree	52	49,1
Age	18-21ages	54	50,9
	22-25 ages	27	25,5
	26 years of age and over	25	23,6
The Length of career in the sport	1-4 years	44	41,5
	5-9 years	32	30,2
	10 years and over	30	28,3
	Total	106	100,0

The data in Table 1 by the variable of gender show that while 46 participants (43.4%) were women, 60 (56.6%) were men. Asked whether they had the status of a national athlete, while 56 participants (52.8%) expressed having this status, 50 participants (50.9%) said that they did not have it. The findings by the variable of the educational background show that 54 (50.9%) participants were high school graduates, while 52 (3.2%) had a bachelor's degree. It was observed, based on the variable of age, that while 74 (68.8%) participants in the 18-21 age group had the highest participation rate, 8 (7.5%) participants had the lowest one.

By the variable of career length in the sport, while 54 (50.9%) participants with a career length between 1 and 4 years had the highest participation rate, 20 (18.9%)

participants with a career time of 10 years or more in the sport had the lowest one.

Table 2: Results of the Normality Distribution Test (Skewness-Kurtosis) of the Sub-dimensions of Self-Talk and Coping with Stress.

Scale	Sub-dimension	N	Skewness		Kurtosis	
			Statistics	SD	Statistics	SD
Self-talk	Cognitive Function	106	-.519	,235	-.562	,465
	Motivational Function	106	-.566	,235	-.751	,465
	Total	106	-.966	,235	-.913	,465
Coping with Stress	Analytics	106	-.600	,235	-.326	,465
	Positive Evaluation	106	-.075	,235	-1,225	,465
	Seeking Support	106	-.152	,235	-.326	,465
	Problem-solving	106	-.996	,235	-.699	,465
	Total	106	-.450	,235	-.158	,465

The data in Table 2 concerning the normality distribution of the sub-dimensions of self-talk and coping with stress show that the kurtosis and skewness values show normal distribution. Tabaschnick and Fidell (2013) report that if the skewness and kurtosis coefficients of the scales are between -1.5, +1.5, the data will display a normal distribution.

Table 3: Comparison of the Average Sub-dimensional Variables of Self-talk and Coping with Stress by Gender Variable (Independent - Sample T-Test)

Scale	Sub-dimensions	Gender	N	$\bar{X}$	Sd	t	p
Self-talk	Cognitive Function	Men	60	3,93	,838	1,183	,242
		Women	46	4,13	,865		
	Motivational Function	Men	60	4,25	,831	,446	,664
		Women	46	4,17	,978		
	Total	Men	60	4,13	,743	-,135	896
		Women	46	4,15	,914		
Coping with Stress	Analytics	Men	60	4,23	,668	,126	,899
		Women	46	4,21	,611		
	Positive Evaluation	Men	60	4,21	,656	1,790	,067
		Women	46	4,00	,507		
	Seeking Support	Men	60	3,67	,800	1,705	,078
		Women	46	3,43	,580		
	Problem-solving	Men	60	4,25	,741	-,817	,388
		Women	46	4,34	,441		
	Total	Men	60	4,11	,581	,848	,377
		Women	46	4,02	,405		

(p<0.05)

The comparison of the data shown in Table 3 regarding the sub-dimensions of self-talk and coping with stress by the gender of the participants shows that there was no significant difference in all of the sub-dimensions as well as in the overall score; a finding which indicates that the H2 hypothesis was rejected.

Table 4: Comparison of the Average Scores in the sub-dimensions of Self-talk and Coping with Stress by the variable of Educational Background (Independent - Sample T-Test)

Scale	Sub-dimensions	Educational Background	N	$\bar{X}$	Sd	t	p
Self-talk	Cognitive Function	High School	54	3,69	,942	-3,318	,001*
		Bachelor's	52	4,35	,586		
	Motivational Function	High School	54	4,07	1,061	-1,643	,101
		Bachelor's	52	4,36	,660		
	Total	High School	54	3,93	,939	-2,727	,007*
		Bachelor's	52	4,36	,607		
Coping with Stress	Analytics	High School	54	4,27	,707	,839	,402
		Bachelor's	52	4,17	,566		
	Positive Evaluation	High School	54	4,24	,604	2,142	,034*
		Bachelor's	52	4,00	,581		
	Seeking Support	High School	54	3,69	,746	1,864	,065
		Bachelor's	52	3,43	,674		
	Problem-solving	High School	54	4,28	,667	-,145	,468
		Bachelor's	52	4,30	,550		
	Total	High School	54	4,14	,573	1,975	,052
		Bachelor's	52	4,00	,432		

(p<0.05)

The comparison of the data in Table 4 concerning the sub-dimensions of self-talk and coping with stress by the variable of the educational background show that there is a significant difference in favour of the motivational function, one of the sub-dimensions of self-talk, and also in favour of the participants with high school education based on the overall scores. The data also indicate a significant difference in favour of the participants with high school education in the sub-dimension of positive evaluation, a sub-dimension of Coping with Stress; a finding that indicates that the hypothesis H3 was confirmed.

Table 5: The Comparison of the Participants' Average Scores in the Sub-dimensions of Self-talk and Coping with Stress by the Variable of

Age (One- Way Anova)

Scale	Sub-dimension	Age	n	$\bar{X}$	Sd	f	p	Significant Difference
Self-talk	Cognitive Function	(a) 18-21 years of age	54	4,05	,889	,756	,472	--
		(b) 22-25 years of age	27	4,11	,669			
		(c) Aged 26 and over	25	3,84	,946			
		Total	106	4,01	,851			
	Motivational Function	(a) 18-21 years of age	54	4,21	,895	3,024	,053*	B>C
		(b) 22-25 years of age	27	4,51	,452			
		(c) Aged 26 and over	25	3,91	1,146			
		Total	106	4,21	,894			
	Total	(a) 18-21 years of age	54	4,15	,824	2,294	,106	--
		(b) 22-25 years of age	27	4,36	,475			
		(c) Aged 26 and over	25	3,88	1,028			
		Total	106	4,14	,818			
Coping with Stress	Analytics	(a) 18-21 years of age	54	4,25	,623	6,201	,003*	A>C B>C
		(b) 22-25 years of age	27	4,48	,428			
		(c) Aged 26 and over	25	3,89	,742			
		Total	106	4,22	,641			
	Positive Evaluation	(a) 18-21 years of age	54	4,11	,626	6,184	,003*	B>C
		(b) 22-25 years of age	27	4,40	,485			
		(c) Aged 26 and over	25	3,84	,546			
		Total	106	4,12	,603			
	Seeking Support	(a) 18-21 years of age	54	3,65	,795	,730	,484	--
		(b) 22-25 years of age	27	3,50	,668			
		(c) Aged 26 and over	25	3,46	,596			
		Total	106	3,56	,720			
	Problem-solving	(a) 18-21 years of age	54	4,33	,602	5,408	,005*	A>C B>C
		(b) 22-25 years of age	27	4,49	,434			
		(c) Aged 26 and over	25	3,97	,683			
		Total	106	4,29	,610			
	Total	(a) 18-21 years of age	54	4,10	,536	5,607	,005*	A>C B>C
		(b) 22-25 years of age	27	4,25	,361			
		(c) Aged 26 and over	25	3,80	,505			
		Total	106	4,07	,511			

(p<0.05)

Table 6: Comparison of the Participants' Average Scores in the Sub-dimensions of Self-talk and Coping with Stress by the variable of the length of career in the Sport (One- Way Anova)

Scale	Sub-dimension	Age	n	$\bar{X}$	Sd	f	p	Significant Difference
Self-talk	Cognitive Function	(a) 1-4 years	44	3,81	,963	2,469	,090	--
		(b) 5-9 years	32	4,07	,633			
		(c) 10 years and over	30	4,25	,838			
		Total	106	4,01	,851			
	Motivational Function	(a) 1-4 years	44	3,91	1,102	4,765	,010*	C>A B>A
		(b) 5-9 years	32	4,40	,462			
		(c) 10 years and over	30	4,47	,787			
		Total	106	4,21	,894			
	Total	(a) 1-4 years	44	3,87	,991	4,432	,014*	C>A
		(b) 5-9 years	32	4,28	,473			
		(c) 10 years and over	30	4,39	,730			
		Total	106	4,14	,818			
Coping with Stress	Analytics	(a) 1-4 years	44	4,01	,710	5,679	,005*	B>A
		(b) 5-9 years	32	4,50	,452			
		(c) 10 years and over	30	4,23	,612			
		Total	106	4,22	,641			
	Positive Evaluation	(a) 1-4 years	44	4,07	,628	,455	,636	---
		(b) 5-9 years	32	4,20	,629			
		(c) 10 years and over	30	4,11	,545			
		Total	106	4,12	,603			
	Seeking Support	(a) 1-4 years	44	3,58	,741	,022	,978	--
		(b) 5-9 years	32	3,57	,742			
		(c) 10 years and over	30	3,54	,686			
		Total	106	3,56	,720			
	Problem-solving	(a) 1-4 years	44	4,19	,658	5,795	,004*	B>A, C
		(b) 5-9 years	32	4,58	,410			
		(c) 10 years and over	30	4,12	,623			
		Total	106	4,29	,610			
	Total	(a) 1-4 years	44	3,98	,569	2,668	,074	--
		(b) 5-9 years	32	4,24	,419			
		(c) 10 years and over	30	4,06	,482			
		Total	106	4,07	,511			

(p<0.05)

Table 7: Results on the Correlation between Participants' Self-talk and Coping with Stress (Correlation Table)

Dimensions		Cognitive Function	Motivational Function	Analytics	Positive Evaluation	Seeking for Support	Problem – solving
Cognitive Function	Pears. Cor. P N	1 106					
Motivational Function	Pears. Cor. P N	,706** ,000 106	1 106				
Analytics	Pears. Cor. P N	,268** ,005 106	,625** ,000 106	1 106			
Positive Evaluation	Pears. Cor. P N	,212** ,030 106	,590** ,000 106	,738** ,000 106	1 106		
Seeking for Support	Pears. Cor. P N	,155 ,114 106	,325** ,001 106	,353** ,000 106	,436** ,000 106	1 106	
Problem-solving	Pears. Cor. P N	,302** ,002 106	,354** ,000 106	,609** ,000 106	,500** ,000 106	,461** ,000 106	1 106

The comparison of the data in Table 5 concerning the sub-dimensions of self-talk and coping with stress by the variable of age show that there is a significant difference in favour of the participants aged 22-25 in the dimension of motivational function that is one of the sub-dimensions of self-talk. Data also indicate a significant difference in favour of the participants aged 26 and over in the dimensions of analytics, positive evaluation, problem-solving that are sub-dimensions of coping with stress and also in the overall score. This finding indicates that hypothesis H3 was confirmed.

The comparison of the data in Table 6 concerning the participants' scores in the sub-dimensions of self-talk and coping with stress by the variable of the length of career in the sport indicates significant differences in disfavour of the motivational function, a sub-dimension of self-talk, and also in the disfavour of the participants with a career length of 10 years and over based on the overall score. The data also indicate a significant difference in favour of the participants with a length of career of 1-4 years in the sub-dimension of problem-solving, one of the sub-dimensions of coping with stress. These findings show that was4 is confirmed

The Pearson Correlation Analysis was conducted to investigate the correlation between the sub-dimensions of self-talk and those of coping with stress shown in Table 7. The data show that there is a high-level positive correlation between the sub-dimensions of cognitive function and motivational function ($r=.706$). The data also indicate a low-level positive correlation between cognitive function and analytics ($r=.268$). The data indicate the following correlations too: a low-level positive correlation ($r=.212$) between cognitive function and positive evaluation, a low-level positive correlation ($r=.155$) between cognitive function and seeking for support, and a medium-level positive correlation ($r=.302$) between cognitive function and problem-solving.

The findings further indicate a medium-level positive correlation ($r=.625$) between motivational function and analytics, a medium-level positive correlation ($r=.590$) between motivational function and positive evaluation, a low-level positive correlation ($r=.325$) between motivational function and seeking for support and a low-level positive correlation ($r=.354$) between motivational function and problem-solving.

Other correlations observed in the study are as follows: A high-level positive correlation ($r=.738$) between analytics and positive correlation, a low-level positive correlation ($r=.353$) between analytics and seeking for support, and a medium-level positive correlation ($r=.609$) between analytics and problem-solving.

The study also found a medium-level positive correlation ($r=.436$) between positive evaluation and seeking for support, a medium-level positive correlation ($r=.500$) between positive evaluation and problem-solving, and a medium-level positive correlation ($r=.461$) between seeking for support and problem-solving.

Table 8: The Results of the linear regression analysis on the conceptions of coping with the stress of self-talk

	B	SH	Beta	T	P	F (p)	R ²
Fix	2,712	,221	,525	12,295	,000	17,671	,276
Self-talk	,329	,052	,525	6,298	,000		

Dependent variable: Coping with Stress

The results of the linear regression analysis shown in Table 8 indicate that self-talk predicts 27% of the perceptions of coping with stress, a finding that shows that hypothesis H1 was confirmed.

DISCUSSION AND CONCLUSION

In this study, which was conducted to investigate the perceptions of the Turkish Curling National Team's athletes of all age groups to cope with stress, the comparison of the participants' sub-dimensions of self-talk and coping with stress by the variable of gender revealed no significant difference in all the sub-dimensions and the overall score. This result shows that the variable of gender does not have an important effect on self-talk and coping with stress. The study performed by Bayköse (2017) with a sample consisting of athletes on the effects of self-talk and level of passion on mental stamina found no statistically significant difference between gender and self-talk levels. In the study he conducted with students preparing for a place at a faculty of sports sciences to investigate their personal characteristics and styles of coping with stress, Karadağlı (2019) found no statistically significant difference between the variable of gender and styles of coping with stress. The study performed by Berk (2017) with a sample of elite track and field athletes on the correlation between problem-

solving skills and styles of coping with stress also found no statistically significant difference between the variable of gender and levels of coping with stress. A review of the related literature has revealed that the results of the present study are consistent with those observed in earlier studies. Contrary to these findings, however, the study conducted by Hocaoglu (2017) with a sample consisting of athletes on self-talk and anxiety level in the sport found a statistically significant difference between the variable of gender and self-talk levels, with average scores of women athletes higher than those of men athletes in the dimension of cognitive function. In their study they performed with students studying in the faculty of sports sciences to investigate their levels of self-talk, Gülşen, Yıldız et al. (2018) observed a statistically significant difference between the variable of gender and students' levels of self-talk, with average scores of men participants higher than those of women participants in the motivational dimension and also in the overall score. The study conducted by Akman (2019) on adult athletes' imagination, inner speech, and coping with stress found no statistically significant difference between the levels of self-talk and the variable of gender. But it was observed in the same study that there was a significant difference between the variable of gender and the sub-dimension of relaxation of the scale of coping with stress in sports, a result indicating that the men athletes had higher average scores than the women athletes.

Based on the comparison of the sub-dimensions of self-talk and coping with stress by the variable of educational background, the study found a statistically significant difference between the participants with a bachelor's degree and those with high school education in the motivational function, a sub-dimension of self-talk, and the overall score. In the sub-dimension of positive evaluation, one of the sub-dimensions of coping with stress, the study found a statistically significant difference between the participants with high school education and those having a bachelor's degree. The study performed by Berk (2017) with a sample consisting of elite track and field athletes to investigate the relationship between problem-solving skills and the styles they used to cope with stress found no statistically significant difference between the variable of educational background and levels of coping with stress. A review of the literature reveals that there have only been a few studies that have investigated the self-talk and conception of coping with stress based on the variable of educational background. The findings show that the participants with high school education had average scores higher than those with a bachelor's degree in all the sub-dimensions and overall score, a result showing that the variable of educational background has an important influence on self-talk and coping with stress.

The comparison of the sub-dimensions of self-talk and coping with stress by the variable of age indicates a statistically significant difference in all the dimensions and overall scores, except in the sub-dimensions of cognitive function and seeking for support. The findings indicate that the participants in the age group of 22 to 25 year-olds had average scores higher than the participants of 26 years of age and over in the motivational function that is a sub-dimension of self-talk and the overall score. The findings

further indicate that the participants in the age group of 18-21 and the ones in the age group of 22-25 had average scores higher than those of 26 years old and over in the sub-dimensions of analytics, positive evaluation, and problem-solving, all sub-dimensions of coping with stress, and also in the overall score. This result shows that the variable of age has an important effect on self-talk and coping with stress. The study conducted by Hocaoglu (2017) on self-talk and sports anxiety level found no statistically significant difference between self-talk and the variable of age. The study of Cavdarlı (2013) conducted with a sample consisting of participants at a high school found no statistically significant difference between coping with stress and variable of age. In the study performed with elite track and field athletes to investigate the relationship between skills of problem-solving and styles of coping with stress, Berk (2017) did not find any statistically significant difference between the stress-coping levels and the variable of age. Another study conducted by Karadağlı (2019) with students preparing for a place in a faculty of sports sciences to investigate their personal characteristics and styles of coping with stress found no statistically significant difference between the variable of age and levels of coping with stress. The findings reveal that the results concerning the athletes' perception of self-talk and coping with stress differ from the results observed in previous studies, a difference that can be attributed to the fact that the sample groups consisted of different populations.

As a result of the comparison of the scores of the participants in sub-dimensions of self-talk and coping with stress by the variable of the length of career in the sport, the study found a statistically significant difference in the sub-dimension of the motivational function that is a sub-dimension of self-talk, and it was observed that the athletes with a career length over 10 years had higher average scores than those with a length of career between 1 and 4 years. Another result is that a statistically significant difference was observed between analytics and problem-solving that are sub-dimensions of coping with stress and the overall score, and that the athletes having a career length between 5 and 9 years had higher average scores than those who expressed having a length of career between 1 and 4 years. This result shows that the variable of the length of career in the sport had an important effect on the dimensions of self-talk and coping with stress. The study conducted by Akman (2019) with adult athletes on their imagination, self-talk, and coping with stress found no statistically significant difference between the levels of self-talk and the variable of the length of career in the sport, but a significant difference was observed in the scale of coping with stress. Another finding of this study is that the average scores of the athletes with a length of career between 1 and 11 years had higher scores than those with an experience between 1 and 10 years in the sport in the sub-dimensions of imagination, effort, thought control, and mental analysis. The study conducted by Karadağlı (2019) with students preparing for a place in a faculty of sports sciences to investigate their personal characteristics and styles of coping with stress found no statistically significant difference between the variable of the length of career in the sport and the levels of coping with stress and observed

that the perceived stress levels of the athletes with an experience of under 1 year in the sport were higher than those with a length of career of 4 years. A review of the literature has revealed that the findings of our study are consistent with those observed in past research. Contrary to these results, the study performed by Hocaoglu (2017) on self-talk and sport anxiety levels found no statistically significant difference between the variable of the career length in the sport and the dimension of self-talk. The study performed by Bayköse (2017) with a sample consisting of athletes on the effects of self-talk and level of passion on mental stamina found no statistically significant difference between the variable of career length in the sports gender and self-talk levels. Another study conducted by Berk (2017) with elite track and field athletes to investigate the relationship between skills of problem-solving and styles of coping with stress, Berk (2017) did not find any statistically significant difference between the stress-coping levels and the variable of length of career in the sport.

CONCLUSION

In conclusion, the results concerning the normality distribution of sub-dimensions of self-talk and coping with stress reveal that the kurtosis and skewness values show normal distribution. The comparison of the sub-dimensions of self-talk and coping with stress by the variable of gender indicates that there was no significant difference in all of the sub-dimensions as well as in the total score. Therefore, hypothesis H2 was rejected.

The comparison of the sub-dimensions of self-talk and coping with stress by the variable of educational background revealed that there was a significant difference between the dimension of motivational function, a sub-dimension of self-talk, and the total score in favour of the participants with high school education. The study further found a significant difference in the dimension of positive evaluation, a sub-dimension of coping with stress, a significant difference was found in favour of the participants with high school education. Hence, the H3 hypothesis H3 was confirmed.

The results of the comparison of the sub-dimensions of self-talk and coping with stress by the variable of age show a significant difference in favour of the participants aged 22-25 years in the dimension of motivational function, a sub-dimension of self-talk. The dimensions of logical analysis, positive evaluation, problem-solving, sub-dimensions of coping with stress, and the total score were found to be significantly different in disfavour of the participants aged 26 and over. Hence, hypothesis H3 was confirmed.

The results of the comparison of the sub-dimensions of self-talk and coping with stress by the variable of the length of career in the sport indicate a significant difference in disfavour of the participants with a career length of 10 years or more in the sub-dimension of the motivational function, a sub-dimension of self-talk, and in the total score. The study found a significant difference in the sub-dimension of problem-solving, a sub-dimension of coping with stress, in favour of the participants who expressed having a career length between 1 and 4 years. Thus, hypothesis H4 was confirmed.

The results of the linear regression analysis revealed

that self-talk predicted 27% of the perceptions of coping with stress, a finding showing that hypothesis H1 was confirmed.

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