

Volitional self-control in dysregulation strategies of junior athletes

IHOR POPOVYCH¹, HALYNA MATUSIAK², ILKHOM SOLIEV³, OKSANA HRYTSUK⁴,
TETIANA BURDINA⁵, NATALIYA TKACHENKO⁶, OKSANA LOS⁷, SERHII ILCHUK⁸

^{1,7}Kherson State University, Kherson, UKRAINE

¹Mykola Yarmachenko Institute of Special Pedagogy and Psychology, Kyiv, UKRAINE

¹National Academy of Pedagogical Sciences of Ukraine, Kyiv, UKRAINE

²Kherson State Agrarian and Economic University, Kherson, UKRAINE

³Fergana State University, Fergana, UZBEKISTAN

⁴National University of Ostroh Academy, Ostroh, UKRAINE

⁵Ivan Franko National University of Lviv, Lviv, UKRAINE

⁶Volodymyr Dahl East Ukrainian National University, Kyiv, UKRAINE

⁸Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, UKRAINE

Published online: December 31, 2025

Accepted for publication: December 15, 2025

DOI:10.7752/jpes.2025.12271

Abstract:

The aim is to perform theoretical and empirical research on the manifestations, psychological correlations, and differences in volitional self-control related to dysregulation strategies in junior athletes. **Methods:** The study involved a random sample of junior athletes from Ukrainian sports schools of the Olympic reserve for children and youth, including students with experience playing on U-17 and U-19 junior teams of professional sports clubs. A total of 130 respondents aged 15–19 participated, with 67 female athletes (51.54%) and 63 male athletes (48.46%). The descriptive statistics for age were $M = 17.12$ and $SD = \pm 3.28$. **Results.** It was substantiated that the descriptive frequency characteristics of non-productive coping strategies and the dimensions of junior athletes' emotional dysregulation allowed for creating a general profile of respondents' dysregulation strategies. It was explained that the profile allows for identifying respondents' capacity for volitional self-control. The smaller the area outlined by a dysregulation contour, the higher the level of productive coping, and the lower the probability of destabilization in juniors' sports activities. Correspondingly, a large area testifies to junior athletes' poor ability to control learning and training, competitive, and rehabilitative activities. A comparison by the grouping variables "general volitional self-control", "perseverance", and "self-mastery" was performed. Significant differences were identified in all the parameters of the grouping variable "general volitional self-control". The only superiority was recorded in "distancing coping" by two grouping variables, "perseverance" and "self-mastery". It was explained that junior athletes with a low level of perseverance and self-mastery are prone to "distancing coping", which negatively affects learning and training, competitive, and rehabilitative activities. The results of the correlation matrix show that a lack or a low level of self-mastery in juniors is a cause of all failures in sports activities. Dimensionality reduction allowed for recording two factors, "volitional dysregulation" and "controlled emotional dysregulation". **Discussion and conclusions.** It was substantiated that research into volitional self-control in dysregulated behaviors is a confirmatory strategy aimed at finding the levels, establishing correlations, and identifying differences and dominant junior athletes' dysregulated states at the stage of their professional and personal development. It was summarized that the established scientific facts possess scientific novelty in developing junior athletes' emotional and volitional sphere. It was recommended that the identified patterns and new knowledge be implemented in the learning and training process at sports schools of the Olympic reserve for children and youth.

Keywords: rumination, perseverance, self-mastery, mental state, self-regulation, mentalizing difficulties, confrontation.

Introduction

Modern youth sports are an important and consistent stage in the system of training professional athletes. Youth sports instill fondness for physical culture and sports in children and promotes specialization in sports activities. Notably, youth sports, aimed at selecting the most gifted junior athletes, create conditions for these athletes' development, involving them in competitions for national teams. Youth sports lay the foundations for higher achievements and a winner's mindset and spirit. Psychology scientists studying developmental patterns focus on the dynamic development of adolescents' emotional and volitional sphere, which becomes complex and diverse (Dutkevych, 2012). Middle adolescence is characterized by noticeable changes when compared to early adolescence. Junior athletes' emotional and volitional sphere becomes more distinctive and flexible. Systematic training, daily schedule, discipline, and responsibility create necessary conditions for mastering and managing

one's emotions, feelings, and willpower. Juniors, engaging in intensive activities, seldom manifest affective reactions. Their emotional lives are still intense but less turbulent and more stable. Unlike amateur children's competitions, junior athletes' sports activities become restrained and moderate. And the argument is that many junior athletes peak in regional, national and international competitions daily.

The development of junior athletes' volitional component in the context of shaping their emotional and volitional sphere is accompanied by increased conscious self-control related to the desire to meet the group requirements. A reference group plays a key role in developing volitional self-control. Junior athletes regard such a group as an example when comparing and shaping their viewpoints, values, ideals, and behaviors. A reference group serves as a standard and a reference system used by individuals to evaluate themselves and others. At the same time, junior athletes' levels of self-control are still unstable and situational. The same athlete can show a completely different result in similar competitive situations. In part, the answer lies not in physical training but in psychological readiness and capacity for self-regulation (Abahnini et al., 2024; Boryshevsky, 2012; Nosov et al., 2021). A lack of experience and the inability to make systematic volitional efforts to overcome obstacles and a dependence on external factors often result in junior athletes' irresponsibility and unreliability. This is accompanied by dynamic emotions and a proneness to take offense easily and without any reason. Notably, physical and mental over-exertions considerably reduce juniors' self-control and heighten emotional sensitivity and vulnerability. It is known that emotional sensitivity and vulnerability catalyze the formation of psychological defenses. Psychological defenses significantly affect the individual's cognitive sphere and the outcomes of leading activities (Plokhikh et al., 2025).

A retrospective analysis of the content psychological parameters of junior athletes' emotional and volitional sphere (Jordalen et al., 2018; Popovych et al., 2021), the specificity of their vascular regulation (Cretu et al., 2021; Prabowo et al., 2024), and the patterns of the functional state of the nervous system (Kozin et al., 2022; 2023) allowed for detecting the following: the leading type of junior athletes' activities becomes more diverse and flexible, more controllable and manageable; feelings and the corresponding needs (aesthetic, intellectual, social, moral) reach a significant level of development; the individual and typological peculiarities of juniors' emotional and volitional sphere become more distinctive; the functional state of the nervous system determines athletes' success in learning and training, competitive, and rehabilitative activities; the level of conscious self-control related to the desire to meet the requirements of a reference group increases; the level of self-control is still unstable and situational, which creates favorable conditions for the formation of defense and activation of coping behaviors. In summary, adolescence is quite controversial and sensitive in developing the individual's self-control. The aforementioned ideas, clarifications, and generalizations convincingly outlined the relevance of our research into volitional self-control in junior athletes' dysregulation strategies.

A.-M. Elbe et al. (2005) propose two studies, cross-sectional and longitudinal, that examined the development of volitional capacities of junior athletes attending an elite sports school. The researchers established two important facts: self-optimization involves skills needed to achieve the aim, and self-restraint includes skills used in stressful situations. To a large extent, self-optimization is mostly aimed at adjusting oneself, and self-restraint relates to overcoming external obstacles, i.e., the work of effective coping strategies. When comparing junior athletes with non-athletes, A.-M. Elbe et al. (2005) determined a significantly higher level of self-optimization in the latter. Notably, the productive coping strategies "problem-solving", "reappraisal", and "social support" are important in achieving the winning outcome. The role of dominant mental states, which are emotional and volitional characteristics transformed into relatively constant manifestations, should not be overlooked (Popovych et al., 2024). Researcher L. Long (2025) proposed a model for assessing the structure of elite athletes' volitional qualities that combined eight dimensions: the desire for self-actualization, a clear goal, self-control, self-confidence, tolerance of challenges, burnout resistance, perseverance, and determination. Interestingly, the highest mean value (M) was recorded in the parameter "clear goal" (M = 4.52), followed by "self-control" (M = 3.61), and "burnout resistance" (M = 3.17), and the rest of the parameters had relatively lower values. In scientific sports literature, many studies are aimed at measuring self-control (Liang et al., 2020), creating relevant and operationalized models of volitional self-control and self-regulation (Mirmoezzi et al., 2024; Pollard-McGrandy et al., 2023). However, there are many fewer publications examining volitional self-control in dysregulated mental states, which is our research subject.

Research into volitional self-control in dysregulated behaviors is a confirmatory strategy aimed at determining the levels, establishing psychological correlations, and identifying significant differences and dominant complexes of junior athletes' dysregulated mental states at the stage of professional and personal development. The established scientific facts may be of scientific value in the context of developing junior athletes' emotional and volitional sphere.

Hypothesis. Volitional self-control may have correlations with junior athletes' dysregulation strategies; a comparison by the grouping variables of volitional self-control parameters will present a different picture of significant superiorities in the studied groups; dimensionality reduction will allow for detecting the dominant complexes of junior athletes' dysregulated behaviors.

Aim. To conduct theoretical and empirical research into manifestations, psychological correlations, and differences in volitional self-control in junior athletes' dysregulated behaviors.

Methods

Participants. The random sample consisted of junior athletes attending sports schools of the Olympic reserve for children and youth LSSCY “Enerhetyk” (Lviv, Ukraine), SSSYOR №1 of gymnastics (Ivano-Frankivsk, Ukraine), and Lviv regional school for children and youth №22 (Lviv, Ukraine) ($n = 86$), including respondents from the aforementioned schools who had already played in junior teams U-17 and U-19 of professional sports clubs ($n = 44$). The research involved respondents aged 15 to 19 ($n = 130$), $n = 67$ female athletes (51.54%) and $n = 63$ male athletes (48.46%). The descriptive frequency characteristics of age parameters are: $M = 17.12$; $SD = \pm 3.28$). All research participants identified themselves with sports activities. Most dreamt of professional sports, and others associated their future with coaching. Junior athletes engaged in individual sports ($n = 72$; 55.38%) and team sports ($n = 58$; 44.62%). Among junior athletes taking part in the research, there were participants in sports competitions for the national, European, and world championships and numerous international tournaments.

Organization of Research. The research was organized using a confirmatory strategy with the elements of comparison. Between February and May, 2025, an empirical dataset was collected through Google Forms. At first, respondents gave informed consent to participate in the survey and indicated their age. Afterwards, they obtained access to questionnaires. Preliminary consent was obtained from the administrations of sports schools of the Olympic reserve for children and youth and the administrations of professional clubs' academies. The researchers also obtained consent from ethical committees and agreed on research subjects within the research topics of departments and grant projects. All ethical requirements for psychological empirical and experimental studies were met. The outlined survey design ensured high statistical reliability and validity of empirical data.

Procedures and Instruments. Volitional self-control parameters were identified using the test questionnaire of the same name “Test of Volitional Self-Control” (TVS). This psychodiagnostic methodology was developed by A. Zverkova and E. Eidmana and presented in the collection by O. Kokun et al. (2012). The version of the methodology “Test of Volitional Self-Control” (Kokun et al., 2012).

Three scales were employed: general volitional self-control (GVS), perseverance (P), and self-mastery (S). Respondents answered thirty statements. The direct Stapel scale was used. The values on the “general volitional self-control” scale ranged from 0 to 24 points; those on the “perseverance” scale – from 0 to 16 points; and those on the “self-mastery” scale – from 0 to 13 points. The level of volitional self-control characterizes the extent of control over one's behavior in various situations and the ability to consciously manage one's actions, psycho-emotional states, and desires.

Perseverance characterizes the strength of junior athletes' purposes and their desire to finish what they started. Junior athletes' self-mastery reflects the level of arbitrary control over emotional reactions and states. The statistical consistency measured using Cronbach's alpha (α) corresponded to a high level ($\alpha = .929$). To identify dysregulation strategies, two psychodiagnostic tools were employed: “Way of Coping Questionnaire” (WCQ) (Lazarus & Folkman, 1984), and “Questionnaire of Emotional Dysregulation” (QED) (Polskaya & Razvalyaeva, 2017), proposed by M. Yatsyuk (2023). Since the methodology “WCQ” (Lazarus & Folkman, 1984) allows for identifying productive and non-productive strategies, according to the research strategy, statistical operations involved only three non-productive strategies referred to as dysregulation strategies: confrontational coping (CC); distancing coping (DC), and escape coping (EC). The values on three scales ranged from 0 to 18 points. The statistical reliability of the collected data for “WCQ” (Lazarus & Folkman, 1984) corresponded to a medium level (.765).

The methodology “Questionnaire of Emotional Dysregulation” (QED) (Polskaya & Razvalyaeva, 2017) was used to assess emotional regulation disorders. Notably, the questionnaire was based on the model built on two parameters of emotional dysregulation: impulsiveness/rigidity of affective reactions and cognitive distortions/impairments. Three scales were used: “rumination” (R), “mentalizing difficulties” (MD), and “avoidance” (A). Respondents answered twenty-three statements on a four point direct Stapel scale with the answer options from “strongly disagree” – 1 to “strongly agree” – 4. The values on the “rumination scale” ranged from 8 to 32 points; those on the “avoidance” scale – from 9 to 36 points; and those on the “mentalizing difficulties” scale – from 6 to 24 points. Junior athletes' rumination is characterized by emotional rigidity, stereotypical negative experiences, and fixating on painful emotional states. Junior athletes' avoidance is accompanied by rejecting highly charged experiences and can involve intense negative emotions with emotional pain. Junior athletes' mentalizing difficulties manifest in emotional immaturity and low emotional competence, affecting emotion recognition and regulation. The statistical consistency of the empirical material for “QED” (Polskaya & Razvalyaeva, 2017) was .789, corresponding to a medium level.

Statistical Analysis. The empirical dataset was automatically exported to “MS Excel”. Afterwards, the data were tested for excessively high (no) and extremely low (one respondent's data) values, which were removed. All statistical operations were performed using the software “IBM SPSS Statistics” version 29.0.0.0 (241). Two figures were created using the graphical editor “MS Word” to qualitatively present the obtained results and content aspects of the discussion. Standardized statistical coefficients and tests were used in the research. Significant correlations and differences were recorded and analyzed at $p \leq .050$, $p \leq .010$, and $p < .001$.

Results

To ensure reproducibility of the empirical research, the main descriptive frequency characteristics were presented for all variables of the psychodiagnostic tools: the “Test of Volitional Self-Control” (Kokun et al., 2012), “Way of Coping Questionnaire” (Lazarus & Folkman, 1984), and the “Questionnaire of Emotional Dysregulation” (Polskaya & Razvalyaeva, 2017). Tabl. 1 shows the (M), the mean squared deviation (SD), and the median (Me).

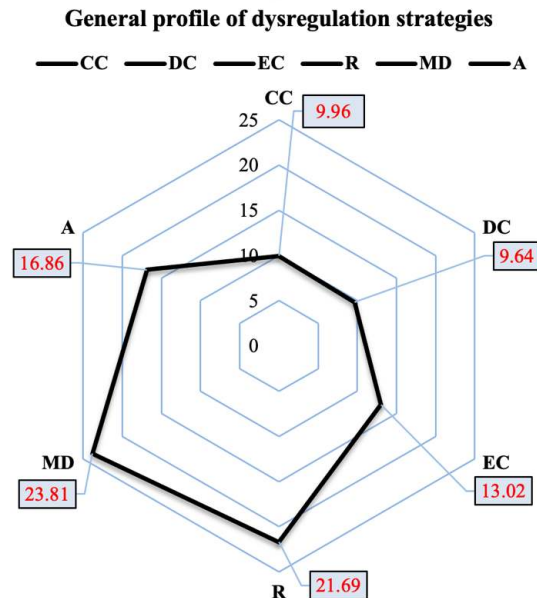
Table 1. Main descriptive frequency characteristics of the variables of the research into volitional self-control in junior athletes' dysregulation strategies (n = 130)

Variables	M	Me	SD
“Test of Volitional Self-control” (Kokun et al., 2012)			
General volitional self-control (GVS)	21.00	22.00	±2.85
Perseverance (P)	14.56	15.00	±2.16
Self-mastery (S)	11.00	12.00	±1.66
Dysregulation copings according to the “Way of Coping Questionnaire” (Lazarus & Folkman, 1984)			
Confrontational coping (CC)	9.96	10.00	±2.87
Distancing coping (DC)	9.64	10.00	±3.41
Escape coping (EC)	13.02	13.00	±3.49
“Questionnaire of Emotional Dysregulation” (Polskaya & Razvalyaeva, 2017)			
Rumination (R)	21.69	23.00	±5.14
Mentalizing difficulties (MD)	23.81	25.00	±5.87
Avoidance (A)	16.86	18.00	±3.95

Note: M – the mean; Me – the median of a distribution (given in *italics*); SD – the mean squared deviation.

The empirical dataset is statistically reliable, which was indicated by medium and high Cronbach's alpha (α) values, ranging from .765 to .929. The obtained data were compared to the average norms proposed by the tests' developers, namely N. Polskaya and A. Razvalyaeva (2017), and the average data obtained on similar junior sports samples (Plokhikh et al., 2025). Using Student's *t*-test to identify significant differences with similar open access data did not allow for finding significant differences ($p \leq .050$; $p \leq .010$). We have reason to believe that the empirical dataset collected in a sample of $n = 130$ people relevantly represented the general population.

The recorded parameters of the descriptive frequency characteristics of respondents' non-productive coping strategies and dimensions of emotional dysregulation allowed for creating a general profile of junior athletes' dysregulation strategies. Weighting coefficients were applied to variables to present objective and accurate data. The general profile was given as a petal diagram. Notably, weighting is essential since the manifestation of each strategy is important because they affect the area outlined by a dysregulation contour. The smaller the area, the higher the level of productive coping strategies, and the lower the probability of destabilizations in juniors' sports activities. A large area testifies to junior athletes' low capacity for controlling their learning and training, competitive, and rehabilitative activities (Fig. I).



Note: — dysregulation contour; CC – confrontational coping; DC – distancing coping; EC – escape coping; R – rumination; MD – mentalizing difficulties; A – avoidance.

Figure I. Petal diagram of the general profile of juniors' dysregulation strategies

The dominant parameters of the petal diagram are “mentalizing difficulties” ($M = 23.81$; $SD = \pm 5.87$) and “rumination” ($M = 21.69$; $SD = \pm 5.14$). The parameter values and the rest of the data in the diagram outline psychological content features of the dynamics and instability of junior athletes' psycho-emotional states. The confirmatory empirical strategy involved a number of comparisons in the context of volitional self-control parameters. A comparison of the studied groups was based on three volitional self-control parameters. Tabl. 2 presents the results of the comparison by the grouping variable “general volitional self-control” between Group 1 ($n = 25$; 19.23%) with a low level ($< Me$) and Group 2 ($n = 105$; 80.77%) with a high level ($\geq Me$). Student's t-test was used for comparison. It allowed for comparing two independent samples (Group 1 and Group 2) and measuring effect size (Cohen's d) in the identified significant differences.

Table 2. Statistical characteristics of the comparison of dysregulation strategies by the grouping variable “general volitional self-control” between Group 1 and Group 2

Scale	Levene's test		Student's t-test for the equality of variances					Cohen's d
	F	p	t	N	p	95 CI		
						Lower	Upper	
CC*	8.077	.005	15.654	57.031	< .001	4.57635	5.91889	2.643
DC	2.054	.154	3.094	128	.002	.81857	3.72238	.689
EC*	4.202	.042	4.264	46.759	< .001	1.40219	3.90828	.796
R*	8.147	.005	2.730	45.693	.009	.68504	4.53401	.516
MD*	6.046	.015	2.851	44.298	.007	.92647	5.39353	.549
A*	6.420	.012	2.503	45.258	.016	.36263	3.34784	.476

Note: * – data presented using Welch's t-test; Group 1 – a low level of general volitional self-control; Group 2 – a high level of general volitional self-control; F – Levene's test for two variances; p – significance level; t – Student's t-test (significant differences are given **in bold**); 95 CI – confidence interval; Cohen's d – effect size; CC – confrontational coping; DC – distancing coping; EC – escape coping; R – rumination; MD – mentalizing difficulties; A – avoidance.

Significant differences were identified for all the compared parameters: “confrontational coping” ($t = 15.654$; $p < .001$; $d = 2.643$), “distancing coping” ($t = 2.994$; $p = .003$; $d = .525$), “escape coping” ($t = 4.264$; $p < .001$; $d = .796$), “rumination” ($t = 2.730$; $p = .009$; $d = .516$), “mentalizing difficulties” ($t = 2.851$; $p = .007$; $d = .549$), and “avoidance” ($t = 2.503$; $p = .016$; $d = .476$). All values showed medium and large effect sizes (Cohen's d). According to Levene's test, five dimensions, except “confrontational coping”, showed critical values. Consequently, Welch's correction was used. Notably, by the grouping variable “general volitional self-control”, “confrontational coping” had the largest effect size ($d = 2.643$) in the group with a low level (Group 1). Thus, junior athletes with a low level of general volitional self-control significantly surpass their counterparts with high levels of this parameter in all dysregulation strategies. Tabl. 3 presents the results of the comparison by the grouping variable “perseverance” between Group 1 ($n = 31$; 23.85%) with a low level ($< Me$) and Group 2 ($n = 99$; 76.15%) with a high level ($\geq Me$) using Student's t-test for two independent samples and measuring effect size (Cohen's d).

Table 3. Statistical characteristics of the comparison of dysregulation strategies by the grouping variable “perseverance” between Group 1 and Group 2

Scale	Levene's test		Student's t-test for the equality of variances					Cohen's d
	F	p	t	N	p	95 CI		
						Lower	Upper	
CC	1.856	.176	-.080	128	.936	-1.31903	1.21617	-.018
DC	.283	.596	-3.410	128	< .001	-3.92499	-1.04263	-.759
EC	1.629	.204	-.088	128	.930	-1.60967	1.47253	-.020
R	.670	.415	-.618	128	.538	-2.97718	1.56003	-.138
MD	1.049	.308	-.613	128	.541	-3.39097	1.78716	-.136
A	.594	.442	-.480	128	.632	-2.16772	1.32201	-.107

Note: Group 1 – a low level of perseverance; Group 2 – a high level of perseverance; F – Levene's test for two variances; p – significance level; t – Student's t-test (significant differences are given **in bold**); 95 CI – confidence interval; Cohen's d – effect size; CC – confrontational coping; DC – distancing coping; EC – escape coping; R – rumination; MD – mentalizing difficulties; A – avoidance.

The only significant difference was found for the parameter “distancing coping” ($t = -3.410$; $p < .001$; $d = .759$). The identified significant difference showed a large effect size (Cohen's d). According to Levene's test, no critical value was recorded. In summary, by the grouping variable “perseverance”, the only superiority was recorded in the group with a low level (Group 1). Thus, junior athletes with a lack of perseverance tend to use

“distancing coping”. Tabl. 4 presents the results of the comparison by the grouping variable “self-mastery” between Group 1 (n = 28; 21.54%) with a low level (< Me) and Group 2 (n = 102; 78.46%) with a high level (≥ Me) using Student's t-test for two independent samples and measuring effect size (Cohen's d).

Table 4. Statistical characteristics of the comparison of dysregulation strategies by the grouping variable “self-mastery” between Group 1 and Group 2

Scale	Levene's test		Student's t-test for the equality of variances					Cohen's d
	F	p	t	N	p	95 CI		
						Lower	Upper	
CC	.034	.854	.080	128	.937	-1.16624	1.26428	.017
DC	1.375	.243	-2.906	128	.004	-3.45023	-.65481	-.620
EC	1.878	.173	.035	128	.972	-1.45159	1.50341	.007
R	.479	.490	-.596	128	.552	-2.82992	1.52039	-.127
MD	.856	.357	-.603	128	.548	-3.23857	1.72596	-.129
A	.366	.546	-.437	128	.663	-2.04282	1.30332	-.093

Note: Group 1 – a low level of self-mastery; Group 2 – a high level of self-mastery; F – Levene's test for two variances; p – significance level; t – Student's t-test (significant differences are given **in bold**); 95 CI – confidence interval; Cohen's d – effect size; CC – confrontational coping; DC – distancing coping; EC – escape coping; R – rumination; MD – mentalizing difficulties; A – avoidance.

Similarly, as in the previous comparison, the only significant difference was found for the parameter “distancing coping” (t = -2.906; p = .004; d = -.620). The identified significant difference showed an effect size close to the medium effect size (Cohen's d). Levene's test detected no critical value. In summary, by the grouping variable “self-mastery”, the only superiority was recorded in the group with a low level (Group 1).

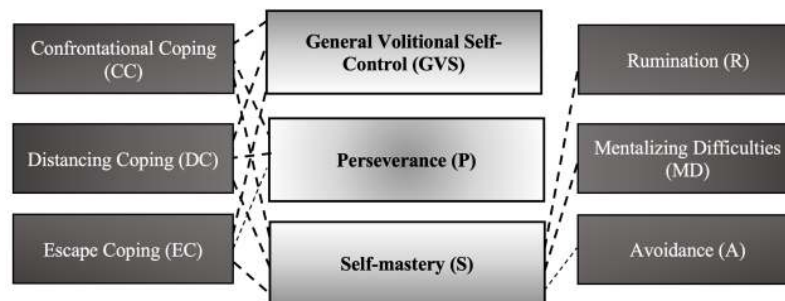
According to the research design, correlations between the parameters of volitional self-control and dysregulation strategies were established. Psychological correlations were established using Pearson's correlation coefficient (R), since a considerable number of dimensions corresponded to a normal distribution, and the number of respondents (n ≥ 100) allowed for using it legitimately. Tabl. 5 presents psychological correlations between volitional self-control and dysregulation strategies.

Table 5. Psychological correlations between the levels of respondents' volitional self-control and dysregulation strategies (n = 130)

Parameters	Statistical parameter	Dysregulation strategies					
		CC	DC	EC	R	MD	A
General volitional self-control (GVS)	R	-.706***	-.274**	-.256**	-.152	-.162	-.128
	p	< .001	.002	.003	.085	.065	.147
Perseverance (P)	R	-.616***	-.228**	-.196*	-.099	-.108	-.079
	p	< .001	.009	.025	.263	.222	.371
Self-mastery (S)	R	-.820***	-.325***	-.349***	-.235**	-.248**	-.209*
	p	< .001	< .001	< .001	.007	.004	.017

Note: R – Karl Pearson's correlation coefficient; p – significance level; * – p ≤ .050; ** – p ≤ .010; *** – p < .001; CC – confrontational coping; DC – distancing coping; EC – escape coping; R – rumination; MD – mentalizing difficulties; A – avoidance.

To qualitatively interpret and clarify controversial aspects, the table was complemented by the graphical correlation pleiade of relationships between the parameters of junior athletes' volitional self-control and dysregulation strategies (Fig. II).



Note: — — — inverse correlations at p ≤ .010 and p < .001; ····· inverse correlations at p ≤ .050.

Figure II. Correlation pleiade of relationships between the parameters of junior athletes' volitional self-control and dysregulation strategies (n = 130)

Twelve inverse correlations between the parameters of volitional self-control ($p \leq .050$; $p \leq .010$ and $p < .001$) and dysregulation strategies were established. It was found that self-mastery is the most dependent parameter of volitional self-control (six significant correlations). Obviously, a lack of self-mastery and/or low levels of self-mastery is a source of junior athletes' failures. Notably, the strongest inverse correlation was recorded between self-mastery and confrontational coping ($R = -.820$; $p < .001$).

Twelve factors' dimensionality reduction is of scientific interest. The principal component method was used with Varimax-rotation and Kaiser normalization. All statistical requirements for applying this method were met; hence, using dimensionality reduction is legitimate. Tabl. 6 presents the matrix of the factor loadings of volitional self-control and dysregulation strategies.

Table 6. Matrix of the factor loadings of volitional self-control and dysregulation strategies in the juniors' sample ($n = 130$)

Parameter	Component	
	Factor 1	Factor 2
General volitional self-control (GVS)	-.656	.734
Perseverance (P)	-.592	.750
Self-mastery (S)	-.730	.664
Confrontational coping (CC)	.813	
Distancing coping (DC)	.518	
Escape coping (EC)	.841	
Rumination (R)	.815	.552
Mentalizing difficulties (MD)	.825	.543
Avoidance (A)	.796	.569

The matrix of total variance after the dimensionality reduction of volitional self-control and dysregulation strategies in the juniors' sample was also presented.

Table 7. Matrix of total variance after the dimensionality reduction of volitional self-control and dysregulation strategies in the juniors' sample ($n = 130$)

Initial eigenvalues			Sum of squared loadings		
V, in total	D (%)	Σ (%)	V, in total	d (%)	Σ (%)
4.931	54.789	54.789	4.931	54.789	54.789
2.729	30.317	85.106	2.729	30.317	85.106
.793	8.809	93.915			
.328	3.641	97.557			
.168	1.861	99.418			
.035	.387	99.804			
.010	.113	99.917			
.004	.044	99.962			
.003	.038	100.000			

Note: D – dispersion; Σ – sum of variances.

The matrix of total variance shows the key dimensions – two factors with loadings greater than one, the magnitude of factor loadings, and the values of total variance: $V = 7.66$; $\Sigma = 85.106$. Factor 1 includes all research variables logically differentiated by loadings, i.e., the parameters of volitional self-control are negatively loaded, and the parameters of dysregulation strategies are positively loaded. Thus, this factor is maximally loaded. It was interpreted as “volitional dysregulation”. This mental state of junior athletes is characterized by troubles with self-control, motivation, goal achievement, unwillingness to develop constructive skills, and addiction proneness. The content of Factor 2 evokes our interest. It includes six variables with negative loadings: “general volitional self-control” (.734), “perseverance” (.750), “self-mastery” (.664), “rumination” (.552), “mentalizing difficulties” (.543), and “avoidance” (.569). We interpret this state as “controlled emotional dysregulation”. Similarly, this is a complex state of junior athletes, in which emotional regulation is quite high despite the dominance of volitional control. Obviously, respondents with this dominant state often have intense emotions, negative experiences, including trauma, and mediocre emotional intelligence.

Discussion

In scientific literature, few studies focus on correlations between the individual's volitional self-control, self-regulation, and negative behavioral manifestations (Cunha et al., 2024; de Borja et al., 2025), destabilizing mental states (Baumeister et 2007; Boat et al., 2021), sociogenic factors, and various destructions (Yoon et al., 2021). Our theoretical studies and statistical operations show that the scientific issue of junior athletes' dysregulation strategies is legitimately in the scope of developing junior athletes' volitional self-control. The dysregulation parameters in our study, including rumination, mentalizing difficulties, and avoidance (see Tabl. 1), relevantly assess dynamic unstable manifestations of the junior athlete's emotional and volitional sphere. It is noteworthy that a high level of rumination can increase the intensity of negative emotions in sports activities.

Rumination causes behavior breakdowns, though its primary purpose is to relieve emotional pain. Dysregulation manifested in avoidance is characterized by emotional arousal, impulsivity, and psychological trauma. Experiencing trauma catalyzes strong emotional pain, considered unbearable by the sufferer. We highlight that immature emotions are the root cause of mentalizing difficulties, manifesting in the individual's lack of knowledge about feelings and emotions, insufficient social experience, and low emotional intelligence.

The indicators of junior athletes' dysregulation strategies give a reason for an optimistic research picture (see Tabl. 1). The general profile of dysregulation strategies (see Fig. I) is a successful attempt to operationalize the research findings. The average values of six dimensions allowed for creating the general profile of respondents' dysregulation strategies using a petal diagram. This profile, used in current work, can be operationalized by a sports club's analytical service or a sports school's educational and methodological department. Simplicity of creation, i.e., graphic design on a personal computer after entering initial average data, and user-friendliness allow for implementing it promptly. It can be effectively used to compare individual profiles. It is important to record the delta of the area growth or reduction compared to previous measurements and search for the cause of these changes. This profile can be used as an additional tool at the stage of suicide prevention among adolescents. In the context of sports activities, it is important that this profile can be used to identify respondents' capacities for volitional self-control. The smaller the area outlined by a dysregulation contour (black line, see Fig. I), the higher the level of productive coping strategies, and the lower the probability of destabilization in juniors' sports activities. Accordingly, higher parameters and a larger area will testify to junior athletes' lower capacities for controlling their learning and training, competitive, and rehabilitative activities. Critical dysregulation values and a large area outlined by the contour will indicate the problems in the emotional and volitional sphere, which require psychological and pedagogical support and psycho-correction.

We used statistical operations of comparison (see Tabl. 1–3) assigning the role of the grouping variable to all parameters of volitional self-control: “general volitional self-control”, “perseverance”, and “self-mastery”. All three comparisons revealed significant differences in the studied groups, which allowed for verifying the second hypothesis. By the grouping variable “general volitional self-control”, the group with a low level of the grouping variable had superiority in all parameters of the comparison, which highlights the value of developing the volitional component in junior sports. The other two comparisons show (see Tabl. 2 and 3) that junior athletes with a lack of perseverance and low levels of self-mastery tend to use “distancing coping”. Distancing that leads to respondents' confrontational coping can manifest as emotional, psychological, or physical detachment, which negatively affects the content components of learning and training, competitive, and rehabilitative activities.

The correlation matrix (see Tabl. 4) and the correlation pleiade (see Fig. II) allowed for verifying the first hypothesis and making a meaningful conclusion: a lack or a low level of young respondents' self-mastery is a source of all their failures in sports activities.

The set of nine variables relevantly reflected the research subject and allowed for a transforming statistical operation – dimensionality reduction using the principal component method with Varimax-rotation and Kaiser normalization (see Tabl. 4 and 5). Two factors were identified: “volitional dysregulation” (loaded by eight parameters) and “controlled emotional dysregulation” (loaded by the parameters of volitional self-control and emotional dysregulation). Factor 1 testifies to troubles with self-control, achievement motivation, the purpose in sports activities, and unwillingness to develop constructive skills, whereas Factor 2 is accompanied by high levels of emotional dysregulation despite the dominance of volitional self-control. This factor indicates the mental state characterized by the coexistence of two opposite feelings and desires accompanied by the struggle of volitional self-control and emotional dysregulation. Interesting scientific facts were established, and the third statistical hypothesis was verified. This research is the first fruitful stage, revealing a number of important statistical facts possessing scientific novelty.

Conclusions

It was substantiated that the research into volitional self-control in dysregulation strategies is a confirmatory strategy aimed at determining levels, establishing psychological correlations, and identifying significant differences in junior athletes' dominant dysregulation states at the stage of professional and personal development. The general profile of dysregulation strategies is a successful attempt to operationalize the research findings. It was highlighted that this profile should be operationalized in the work of sports clubs' analytical services or sports schools' educational and methodological departments. It was noted that this profile allows for identifying respondents' capacities for volitional self-control. It was underscored that this profile can be used as an additional tool at the stage of suicide prevention among adolescents. Comparisons by the grouping variables “general volitional self-control”, “perseverance”, and “self-mastery” were performed. Significant differences were identified in all parameters by the grouping variable “general volitional self-control”. The only superiority was recorded for “distancing coping” by two grouping variables, “perseverance” and “self-mastery”. It was clarified that junior athletes with low levels of perseverance and self-mastery tend to use “distancing coping” that negatively affects their learning and training, competitive, and rehabilitative activities. The results of the correlation matrix are explained by the fact that respondents' lack or low levels of self-mastery are a source of all

their failures in sports activities. Dimensionality reduction allowed for identifying two factors: “volitional dysregulation” and “controlled emotional dysregulation”. It was explained that Factor 1 indicates troubles with self-control, achievement motivation, the purpose in sports activities, and unwillingness to develop constructive skills; Factor 2 combines volitional self-control and high levels of emotional dysregulation. It was noted that in Factor 2, ambivalence identifies the mental state accompanied by the struggle of volitional self-control and emotional dysregulation. The aim was achieved, and three hypotheses were verified. The established scientific facts are of scientific value in developing junior athletes' emotional and volitional sphere and can be implemented in the learning and training process at sports schools of the Olympic reserve for children and youth.

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