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Dispositional optimistic and pessimistic mental states of young athletes: gender differentiation

ANASTASIIA KUROVA¹, IHOR POPOVYCH², ANTONINA HRYS³, IRYNA KOVAL⁴, MARIIA PAVLIUK⁵, SVITLANA POLISHCHUK⁶, ANZHELIKA KOLLY-SHAMNE⁷

¹National University “Odesa Law Academy”, Odesa, UKRAINE

^{2,7}Kherson State University, Kherson, UKRAINE

^{3,5}Kostiuk Institute of Psychology of the NAPS of Ukraine, Kyiv, UKRAINE

^{3,5}Interregional Academy of Personnel Management, Kyiv, UKRAINE

⁴Bogomolets National Medical University, Kyiv, UKRAINE

⁶Drahomanov Ukrainian State University, Kyiv, UKRAINE

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Abstract:

The purpose was to compare the researched parameters based on gender differentiation and to determine young athletes' dispositional optimistic and pessimistic mental states. The study's participants were young people aged 15 to 19 years ($M=17.03$; $SD=\pm 3.98$), who regularly practiced sports and competed in all-Ukrainian and international sports tournaments. Respondents were divided into two groups based on gender: Group 1 – female representatives: handball, athletics ($n=102$; 55.74%); Group 2 – male representatives: football, freestyle wrestling, and weightlifting ($n=81$; 44.26%). **Methods:** valid and reliable psychodiagnostic methods used in sports research and standard purposeful non-participant observation. The following tests and coefficients were used to assess statistical reliability: H-test of Kruskal-Wallis, Spearman correlation parameters (r_s), ranking (Rg), and factor analysis ANOVA. **Results.** The H-test of Kruskal-Wallis revealed differences in the studied parameters, disclosing that junior female athletes (Group 1) outperformed in (CN ($H=7.717$; $p=.005$), SSS ($H=14.049$; $p<.001$) and PR ($H=7.996$; $p=.005$). Junior male athletes (Group 2) prevailed for GAL ($H=9.041$; $p=.003$) and DS ($H=11.686$; $p<.001$). The correlation analysis revealed sixteen statistically significant associations. The ranking recorded the same first position in both samples: Group 1 – Op (Rg1; $r_s=.989$) and Group 2 – Op (Rg1; $r_s=.982$), and then the parameters were arranged differently. It was discovered that there was a statistically significant influence of negative relations of dispositional optimism/pessimism with protective mechanisms in stressful situations of the sports activity – Group 1: DS (Rg2; $r_s=-.982$), CN (Rg4; $r_s=-.967$), Ps (Rg9; $r_s=-.929$) and Group 2: Ps (Rg7; $r_s=-.902$). The subjects' dispositional optimistic and pessimistic mental states were constructed into two-factor structures. The following mental states characterized the sample population of junior female athletes (Group 1): F1_{G1} – “Value-meaning disposition”; F2_{G1} – “Responsible and expected disposition”; F3_{G1} – “Protective-avoidant disposition”. A group of junior male athletes (Group 2) demonstrated the following mental states: F1_{G2} – “Value-meaning disposition”; F2_{G2} – “Responsible and expected disposition”; F3_{G2} – “Distant-confrontational disposition”. **Conclusions.** It is summarized that timely differentiation and identification of dominant mental states by coaching staff and athletes themselves can significantly increase sports psychological literacy, and affect not only local sports results but also the planning of a sports career and life position.

Keywords: gender, youth, motivation, life position, model of expected future, sports career planning.

Introduction

The development of youth sports at the national team level is not only a measure of the result of the sports, and the capabilities of representatives of this age, but also a highly technological and computerized professional activity. Today, there is fierce competition in information, communication, educational, technical, food, recreational, and rehabilitation technologies, beginning with youth sports, which is taking an increasingly strong position, sharing the Olympic and world podiums with older athletes. Seeking out latent resources is one option that can provide an advantage over competitors. We concentrate on the psychophysiological regularities and sensitive potentials of youth. We are convinced that understanding age and psychophysiological regularities by the coaching staff and junior athletes will enable them to competently build educational, training, and competitive processes. Competent construction will contribute to successful sports activities and the development of a sporting career. One of the numerous tasks from which a successful solution can be operationalized in junior sports activities is the study of dispositional optimistic and pessimistic mental states of young athletes in the outlined dimensions.

G. Allport (1961) revealed the disposition as a collection of traits that form a set of tendencies toward a specific subject or events in the external space in his theory of personality. Disposition is an individual's conscious readiness to assess a situation and act based on previous experience (Allport, 1961). Disposition is defined as the subject's readiness or inclination to a specific behavioral act, action, deed, or application of a complex of tactical and technical actions. Any dispositional structure of a young person is built in their inner world and is a complex of life orientations, value-semantic orientations, and individual-typological properties. The dispositional structure can be optimistic or pessimistic. Such a bipolar combination undoubtedly influences the perception of conditions and determines behavior in actual interaction situations. Given the variability of youth, determining dominant mental states is of increasing scientific interest.

A study by P. Gaudreau & J.-P. Blondin (2004) in the sports scientific literature established the relationship of athletes' dispositional optimism/pessimism with coping strategies, goal achievement, and emotional states in competitive activities. The distinct values of the correlation of dispositional optimism and pessimism with adaptation and emotional state variables were clarified. A task-focused coping strategy partially mediates optimism with a positive affective state after the competition. An escape-oriented coping strategy validates the link between pessimism and post-competition anger and depression. The two-dimensional optimism-pessimism model was validated by the researchers (Gaudreau & Blondin, 2004). It is still important to distinguish the content features of optimistic and pessimistic mental states. We considered the use of the coping test in the study, and we intended to use empirical measurements based on this method in the current study. A. Nicholls et al. (2008) attempted to investigate mental resilience, optimism/pessimism, and the ability to overcome stressful situations in their scientific work. A higher level of mental resilience has been linked to optimism and the ability to discover and develop more coping strategies related to mental imagery, self-control, logical analysis, and effort allocation. The benefits of optimism in exhausting physical and psychoemotional training associated with the implementation of mental images have received a lot of attention (Cheban et al., 2020; Nicholls et al., 2008; Norlander & Archer, 2002). R. de la Vega et al. (2012) investigated the dependence of athletes' expectations about their own self-efficacy on optimism parameters. There were no significant differences in the group results. Individual feedback revealed statistically significant differences (de la Vega et al., 2012). We summarize the studied phenomenon's unique individual work, which can be significantly influenced by selective emotional images that comprise the integrated formation of dispositional optimism or pessimism. There are studies that have clarified the impact of optimistic and pessimistic attitudes on respondents' mental health and well-being (Lipowski, 2012). M. Lipowski (2012) contends that optimistic athletes are motivated to win by the expectation of success rather than the fear of failure. An intriguing finding was that gender differences in optimism parameters did not show statistically significant differences. Athletes were more optimistic than non-athletes. There were significant correlations between optimism and positive health behaviors. P. Gaudreau et al. (2015) conducted research in the dimensions of optimism/pessimism and coping strategies for overcoming stressful situations in their study of the dual model of respondents' satisfaction with school and sports. It was discovered that student-athlete optimism is associated with a defensive strategy aimed at task completion, whereas pessimism is associated with a distancing orientation. It has been established that student-athletes who were academically and athletically oriented to problem solving were more satisfied (Gaudreau et al., 2015). Another study used sports performance as a criterion variable to examine the relationship between predictor variables of attributional style and dispositional optimism (Gordon, 2008). Chen et al. (2008) discovered a consistent negative correlation between optimism and the outcomes of athlete burnout. Another study found that social support and a positive psycho-emotional climate were important in helping athletes overcome indifference, exhaustion, and burnout (Popovych et al., 2021b; 2022c).

The author's methodology for researching respondents' dominant mental states was developed, implemented, and tested in the following areas: educational and professional (Popovych & Blynova, 2019a; 2019b; Popovych et al., 2019a), competitive (Popovych et al., 2019b; 2021c; 2022a), recreational (Popovych et al., 2019c; 2022g), educational and training (Popovych et al., 2022b; 2022f), demonstrated that the most significant mental states combined a meaningful and valuable component. Value orientations (Halian, 2022; Huias & Hoian, 2022) are at the heart of any meaningful type of activity, which includes educational and training, competitive, rehabilitation, and restorative activities.

We interpret such dominant mental states of subjects of sports activities as consideration/neglect of age characteristics, psychophysiological patterns, sensitive capabilities, and psychological new formations in youth as dispositional optimistic and pessimistic mental states of young athletes.

Hypotheses. 1) A comparison of the content parameters of the studied mental states by gender differentiation does not show statistically significant differences; 2) The ranking of the correlations of the studied parameters with the dispositional optimism/pessimism (DOP/Ps) scale by gender has a statistically different location; 3) The dispositional optimistic and pessimistic mental states of respondents according to gender differentiation have statistical differences in variability.

Purpose. Comparison of studied parameters based on gender differentiation, as well as clarification of young athletes' dispositional optimistic and pessimistic mental states.

Material and methods

Methodology. The fundamental theoretical and practical basis was formed by the concepts of dispositional optimism and pessimism as a bipolar phenomenon that determines an individual's readiness for activity (Carver & Gaines, 1987; Nazarenko, 2020; Zhebeleva, 2018). According to S. Carver and J. Gaines (1987), high values on the DOp/Ps scale were indicative of optimistic athletes who had little or no dispositional pessimism. Respondents who had a high level of dispositional pessimism and a low level of dispositional optimism had low dispositional optimism values. Average DOp/Ps values indicated a bipolar manifestation of this phenomenon (Carver & Gaines, 1987). The original provisions of Popovych's (2017) socio-psychological concept of personality expectations were used. The disposition of expectations is a combination of cognitive, emotional, value, and conative components of sports activity subjects to the likely scenario of event development (Popovych, 2005; 2009; 2014a). Dispositional expectations are implemented through a variety of functions, including reproductive, mediating, evaluative, and constructive (Popovych, 2014b; 2019), the work of which is critical in choosing strategies to deal with stressful situations (Khraban & Silko, 2022; Tereshchenko, 2014). The anticipatory nature of sports activity is accompanied by the construction of the model of the expected future, which is oriented to the desired, usually winning result or the one that suits the team at this stage, according to the tournament position (Plokhikh, 2021; Popovych et al., 2021a).

The ascertainment strategy with ranking and co-dimensionality reduction of the studied parameters was used. Modern empirical works that comprise the subject core of the researched problem, as well as studies that are tangential to our research, have been studied. Studies that take into account the regularities of educational and professional teaching, training, and competitive processes (Galan et al., 2018; Popovych et al., 2021e; 2022e); psychophysiological regularities and sensitive capabilities of youth (Blynova et al., 2019; Cretu et al., 2021; Kozina et al., 2019); regularities of recreational activities (Galan et al., 2021; Popovych et al., 2022d); mental states of youth (Paliichuk et al., 2018); physical activity research in distance learning technologies (Hudimova, 2021; Hudimova et al., 2021); the impact of information technologies on the performance of youth (Kobets et al., 2021a; 2021b; Nosov et al., 2021a); the role of the "human factor" in ergatic (Mamenko et al., Nosov et al., 2021b) and automatic systems (Zinchenko et al., 2021; 2022a; 2022b).

Participants. Participants of the study were chosen at random from a pool of youth representatives aged 15 to 19 years old ($M=17.03$; $SD=\pm 3.98$). Respondents who systematically practiced sports and competed in all-Ukrainian and international sports tournaments comprised the sample population. All participants were divided into two groups based on their gender: Group 1 consists of female representatives from handball and athletics ($n=102$; 55.74%); Group 2 consists of male representatives from football, freestyle wrestling, and weightlifting ($n=81$; 44.26%). All requirements for creating a sample population that was representative of the general sample were met.

Organization of research. Data collection and independent observation were organized from September to December 2021. The main part consisted of regional and all-Ukrainian pre-match meetings for representatives of team sports; there were tournaments with foreign athletes participating that were equated to international ones for representatives of individual sports.

Procedures and instruments. The "Life Orientation Test" ("LOT") (Carver & Gaines, 1987) was the fundamental psychodiagnostic method, according to the methodology described. We used a revised and shortened version, which is

"LOT -R", developed by T. Gordeeva, O. Sychev and E. Osin (2010). A scale of positive expectations that reflected optimism ("Op") and a scale of negative expectations that reflected pessimism ("Ps") were used in conjunction with the integrated bipolar scale ("DOp/Ps"). The content parameters of dispositional expectations were determined using the author's modified questionnaire "The Level of Social Expectations" ("LSE") (Popovych, 2017): the cognitive component of expectations "CCE", the emotional and value component of expectations "EVCE", the behavioral component of expectations "BCE" and the integral indicator is the general level of expectations – "GLE". The "General awareness of life" ("GAL") scale, based on the test "Life-meaningful orientations" ("LMO") (Leontyev, 2006) was used according to the research methodology. The "Way of Coping Questionnaire" ("WCQ") (Lazarus & Folkman, 1988) was used, specifically, the version adapted and tested in sports research edited by T. Kriukova & Ye. Kuftiak (2007). All eight scales that described respondents' behavior in stressful situations during sports activities were considered. Confrontation, distancing, self-control, social support, responsibility, avoidance, problem solving, and constructive reappraisal were identified as coping strategies. The test "Motivation for Achieving Success and Avoiding Failures" ("MASAF") (Elers, 2002) was used to determine the motivation for achieving success and avoiding failure. Scales of psychodiagnostic methods with an invariant gradation of responses to statements (from two to seven points) were used during the implementation of the research's ascertainment strategy, as were unipolar and bipolar semantic differential scales with direct and/or reverse scoring.

Statistical analysis. The empirical data received were processed using "IBM SPSS Statistics" version 29.0.0.0 (241), with assistance from "MS Excel" in some cases. The figures were created using "MS Word". The following tests and coefficients were used to assess statistical reliability: H-test of

Kruskal-Wallis, Spearman correlation parameters (r_s), ranking (Rg), and ANOVA factor analysis with Varimax rotation. Differences at the $p \leq .050$ and $p \leq .010$ levels were statistically significant.

Results

The following psychodiagnostic methods were chosen to implement the research's ascertainment strategy: "LOT-R" (Gordeeva et al., 2010), "LSE" (Popovych, 2017), "LMO" (Leontyev, 2006), "WCQ" (Lazarus & Folkman, 1988), "MASAF" (Elers, 2002). These methods resulted in the selection of eighteen scales that are sensitive to the outlined phenomena and accurately reflect the subject of the study. The comparison was made using the descriptive frequency characteristics M (average distribution value) and SD (average deviation). Table 1 displays empirical data for the two groups studied: Group 1 – a sample of junior female athletes ($n=102$; 55.74%) and Group 2 – a sample of junior male athletes ($n=81$; 44.26%). The test of Kruskal-Wallis (H) was used to determine statistically significant differences.

Table 1. Comparison of the Studied Parameters of Junior Female Athletes and Junior Male Athletes

Parameters	Group 1		Group 2		Test of Kruskal-Wallis (H)	Level of significance (p)
	Arithmetic mean (M ₁)	Square deviation (SD ₁)	Arithmetic mean (M ₂)	Square deviation (SD ₂)		
"LOT-R"						
DOP/Ps	23.17	±6.83	22.84	±7.28	.015	.903
Op	11.59	±3.27	11.84	±3.18	.129	.720
Ps	4.59	±3.67	5.52	±4.11	3.793	.051
"LSE"						
CCE	18.16	±3.20	18.05	±2.94	.307	.580
EVCE	16.31	±2.45	15.83	±2.84	.754	.385
BCE	37.07	±5.19	37.58	±4.87	.589	.443
GLE	71.88	±10.86	71.56	±10.42	.451	.502
"LMO"						
GAL	96.03	±9.59	100.04	±8.41	9.041	.003
"WCQ"*						
CN	59.26	±6.47	56.51	±5.67	7.717	.005
DS	58.85	±5.88	55.31	±5.93	11.686	<.001
SC	52.13	±7.14	51.95	±6.60	.012	.915
SSS	61.75	±4.67	58.15	±6.10	14.049	<.001
AR	41.57	±7.66	42.65	±7.44	1.940	.164
AD	42.50	±5.74	43.52	±6.40	.472	.492
PSP	51.91	±6.56	51.52	±7.12	.001	.976
PR	53.66	±5.28	51.64	±5.88	7.996	.005
"Motivation for achieving success and avoiding failure"						
MAS	24.16	±2.56	23.68	±2.07	4.121	.058
MAF	16.75	±3.62	17.80	±3.03	3.412	.065

Note: Group 1 – junior female athletes; Group 2 – junior male athletes; LOT-R – questionnaire "Life Orientation Test", edited by T. Gordeeva, O. Sychev and E. Osin (2010); DOP/Ps – bipolar scale of dispositional optimism/pessimism; Op – positive expectations; Ps – negative expectations; LSE – questionnaire "The level of social expectations" (Popovych, 2017); CCE – cognitive component of expectations; EVCE – emotional and value component of expectations; BCE – behavioral component of expectations; GLE – general level of expectations; LMO – test "Life-meaningful orientations" (Leontyev, 2006); GAL – general awareness of life; WCQ – "Way of Coping Questionnaire" (Lazarus & Folkman, 1988); * – raw empirical data converted to T-scores; CN – confrontation; DS – distantiating; SC – self-control; SSS – seeking social support; AR – accepting responsibility; AD – avoidance; PSP – planning to solve a problem; PR – positive reestimation; MASAF – test "Motivation for Achieving Success and Avoiding Failures" (Elers, 2002); MAS – motivation for achieving success; MAF – motivation for avoiding failures.

The H-test of Kruskal-Wallis revealed that junior female athletes (Group 1) outperformed in the following parameters: CN ($H=7.717$; $p=.005$), SSS ($H=14.049$; $p<.001$) and PR ($H=7.996$; $p=.005$). Junior male athletes (Group 2) outperformed in the following parameters: GAL ($H=9.041$; $p=.003$) and DS ($H=11.686$; $p<.001$). The empirical data distribution was relatively uniform; the remaining differences were not statistically significant but did reflect trends. The empirical data obtained did not differ significantly from the range of descriptive frequency characteristics proposed by the authors who adapted the methods "LOT-R" (Gordeeva et al., 2010), "LSE" (Popovych, 2017), "LMO" (Leontyev, 2006), "WCQ" (Kriukova, T. L., & Kuftiak, Ye. V., 2007), "MASAF" (Elers, 2002). Furthermore, the empirical data collected by us for a number of parameters showed no reliable differences from measurements taken on the same scales in other sports studies (Popovych et al., Popovych et al., 2021d; 2022a).

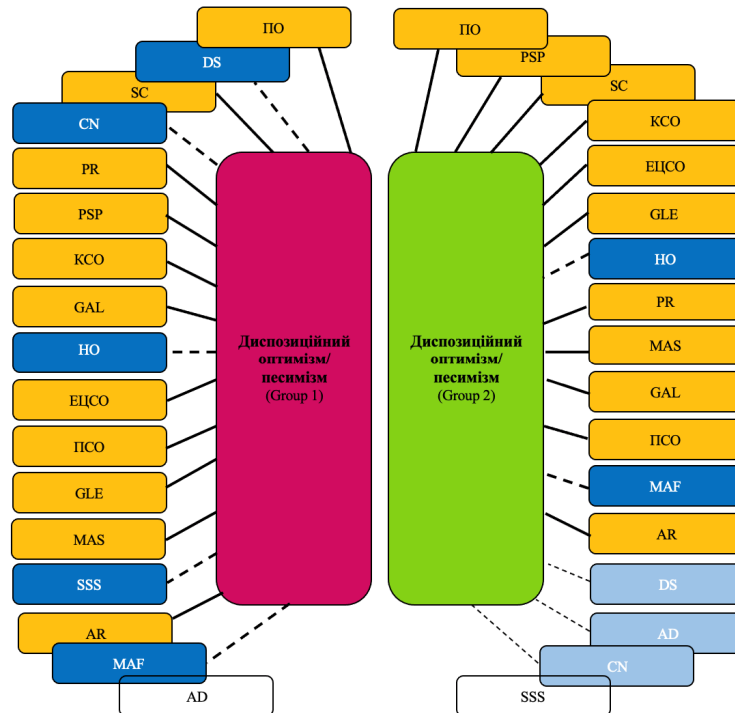
The next step in our strategy was to perform pairwise correlations using Spearman's correlation coefficient (r_s) between the key parameter – dispositional optimism/pessimism (DOP/Ps) – and all of the variables studied. The correlation relations are shown in Tabl. 2 along with a ranking (Rg) based on the correlation's modular value.

Table 2. Ranking of the Studied Parameters According to the Modular Correlation Value

Scale	Dispositional optimism/pessimism (DOP/Ps)			
	Group 1 (n=102)		Group 2 (n=81)	
	r_s	Rg	r_s	Rg
Op	.989**	1	.982**	1
Ps	-.929**	9	-.902**	7
CCE	.948**	7	.953**	4
EVCE	.895**	10	.919**	5
BCE	.810**	11	.790**	11
GLE	.809**	12	.903**	6
GAL	.947**	8	.791**	10
CN	-.967**	4	-.292*	16
DS	-.982**	2	-.350*	14
SC	.980**	3	.965**	3
SSS	-.775**	14	.127	-
AR	.692**	15	.480**	13
AD	-.055	-	-.324*	15
PSP	.959**	6	.966**	2
PR	.963**	5	.835**	8
MAS	.795**	13	.795**	9
MAF	-.473**	16	-.692**	12

Note: Group 1 – junior female athletes; Group 2 – junior male athletes; r_s – Spearman’s correlation; Rg – ranking by correlation modulus; Op – positive expectations; Ps – negative expectations; CCE – cognitive component of expectations; EVCE – emotional and value component of expectations; BCE – behavioral component of expectations; GLE – general level of expectations; GAL – general awareness of life; CN – confrontation; DS – distantiating; SC – self-control; SSS – seeking social support; AR – accepting responsibility; AD – avoidance; PSR – planning to solve a problem; PR – positive reestimation; MAS – motivation for achieving success; MAF – motivation for avoiding failures; * – $p < .05$; ** – $p < .01$.

The correlation galaxy combined with the ranking of the studied parameters is depicted graphically (Fig. I). This positioning of the investigated parameters allowed for qualitative perception and the discovery of reliable scientific facts.



Note: Group 1 – sample of junior female athletes; Group 2 – sample of junior male athletes; — positive correlations at $p \leq .050$; ——— positive correlations at $p \leq .010$; - - - - negative correlations at $p \leq .050$; - - - - negative correlations at $p \leq .010$; Op – positive expectations; Ps – negative expectations; CCE – cognitive component of expectations; EVCE – emotional and value component of expectations; BCE – behavioral component of expectations; GLE – general level of expectations; GAL – general awareness of life; CN – confrontation; DS – distantiating; SC – self-control; SSS – seeking social support; AR – accepting responsibility; AD – avoidance; PSR – planning to solve a problem; PR – positive reestimation; MAS – motivation for achieving success; MAF – motivation for avoiding failures.

Figure I. Correlation Galaxy’s Combination with the Ranking of the Studied Parameters

The data obtained revealed a high level of homogeneity in correlation relationships. The studied samples all had sixteen statistically reliable relationships, with only one pair lacking one. Both samples had the same first position by rank: Group 1 – Op (Rg1; $r_s=.989$) and Group 2 – Op (Rg1; $r_s=.982$). Besides that, there was a difference in rank and correlation values. We found a statistically significant influence of negative correlations in a sample of junior female athletes (Group 1): DS (Rg2; $r_s=-.982$), CN (Rg4; $r_s=-.967$), and with negative expectations Ps (Rg9; $r_s=-.929$). The negative relationship with negative expectations Ps (Rg7; $r_s=-.902$) was the first in the sample of junior male athletes (Group 2). In both groups, there was a similar trend in the direction of correlations (positive/negative).

The proportionality of the investigated parameters was reduced according to the chosen ascertainment strategy in order to determine the prevailing factor loadings. ANOVA factor analysis was used, along with Varimax rotation and Kaiser normalization. The values of factor loadings of dispositional optimistic and pessimistic mental states of young female athletes (Group 1) and young male athletes (Group 2) are shown in Table 3.

Table 3. Comparison of the Prevailing Factor Loadings in Group 1 (n=102) and Group 2 (n=81)

Group 1				Group 2			
Factors (F)	Value (V)	Dispersion (d)	Sum dispersion (Σd)	Factors (F)	Value (V)	Dispersion (d)	Sum dispersion (Σd)
F1 _{G1}	13.791	76.618	76.618	F1 _{G2}	11.962	66.454	66.454
F2 _{G1}	1.900	10.555	87.172	F2 _{G2}	3.050	16.946	83.400
F3 _{G1}	1.548	8.601	95.773	F3 _{G2}	1.458	8.098	91.498

Note: Group 1 – sample of junior female athletes; Group 2 – sample of junior male athletes; F1_{G1} – “Value-meaning disposition”; F2_{G1} – “Responsible and expected disposition”; F3_{G1} – “Protective-avoidant disposition”; F1_{G2} – “Value-meaning disposition”; F2_{G2} – “Responsible and expected disposition”; F3_{G2} – “Distant-confrontational disposition”.

We state that three factors (F1_{G1}, F2_{G1}, F3_{G1}) accounted for 95.773% of the variance of the variables in Group 1, while three factors (F1_{G2}, F2_{G2}, F3_{G2}) accounted for 91.498% of the variance of the variables in Group 2. The data presented (see Tabl. 3) did not allow us to see the content loads of the sample populations for each studied factor. The rotated matrix of the components of Group 1 and Group 2 factor loadings is shown in Table 4.

Table 4. The Rotated Matrix of the Factor Loading Components of the Studied Groups

Scale	Group 1			Group 2		
	F1 _{G1}	F2 _{G1}	F3 _{G1}	F1 _{G2}	F2 _{G2}	F3 _{G2}
DOP/Ps	.979	.184	.011	.953	.275	-.052
Op	.971	.154	-.145	.903	.323	-.197
Ps	-.943	-.239	-.137	-.942	-.287	-.007
CCE	.863	.483	-.015	.858	.477	-.157
EVCE	.648	.623	-.171	.873	.405	.061
BCE	.718	.684	.122	.680	.656	-.283
GLE	.745	.660	.060	.799	.567	-.157
GAL	.897	.367	-.155	.698	.297	-.575
CN	-.913	-.203	.321	-.314	-.033	.927
DS	-.892	-.423	.037	-.246	-.156	.917
SC	.915	.320	-.236	.946	.237	-.178
SSS	-.668	-.306	.548	.286	.236	.890
AR	.350	.890	.223	.154	.927	-.173
AD	-.001	.030	.950	-.239	-.501	-.354
PSP	.910	.394	.046	.848	.488	.071
PR	.963	.134	-.077	.970	-.045	-.055
MAS	.571	.697	-.382	.709	.615	-.082
MAF	.003	-.966	.187	-.368	-.824	-.157

Note: Group 1 – junior female athletes; Group 2 – junior male athletes; F1_{G1} – “Value-meaning disposition”; F2_{G1} – “Responsible and expected disposition”; F3_{G1} – “Protective-avoidant disposition”; F1_{G2} – “Value-meaning disposition”; F2_{G2} – “Responsible and expected disposition”; F3_{G2} – “Distant-confrontational disposition”; DOP/Ps – bipolar scale of dispositional optimism/pessimism; Op – positive expectations; Ps – negative expectations; CCE – cognitive component of expectations; EVCE – emotional and value component of expectations; BCE – behavioral component of expectations; GLE – general level of expectations; GAL – general awareness of life; CN – confrontation; DS – distancing; SC – self-control; SSS – seeking social support; AR – accepting responsibility; AD – avoidance; PSR – planning to solve a problem; PR – positive reestimation; MAS – motivation for achieving success; MAF – motivation for avoiding failures; **Semi-fat** kegel depicts factor loadings that were found to be statistically significant.

The factor loadings of the groups studied were interpreted. In Group 1 the most loaded factor was F1_{G1} – “Value-meaning disposition” which demonstrated the prevalent dispositional positive mental state of young female athletes. This state is based on positive loads on scales: DOP/Ps ($r_s=.979$), Op ($r_s=.971$), CCE ($r_s=.863$), EVCE ($r_s=.648$), BCE ($r_s=.718$), GLE ($r_s=.745$), GAL ($r_s=.897$), SC ($r_s=.915$) PSP ($r_s=.910$), PR ($r_s=.963$) and

MAS ($r_s=.561$) and negative loads according to the scales: Ps ($r_s=-.943$), CN ($r_s=-.913$), DS ($r_s=-.892$) and SSS ($r_s=-.668$). This was the main factor that best reflected young female athletes' determination to win.

F2_{G1} – “Responsible and expected disposition” was the second most loaded factor, which, like the first, belonged to young female athletes' dispositional positive mental states. Positive factor loadings on the following scales were recorded: EVCE ($r_s=.623$), BCE ($r_s=.684$), GLE ($r_s=.660$), AR ($r_s=.890$), and MAS ($r_s=.697$) with one negative loading on the MAF scale ($r_s=-.966$). This factor was crucial because it was part of the dispositional positive mental states and represented the intentions of the attitude toward sports activities.

F3_{G1} – “Protective-avoidant disposition” was the least loaded factor in young female athletes' dispositional negative mental state. This state was founded on two positive scale loads: SSS ($r_s=.548$) and AD ($r_s=.950$). This dispositional negative mental state indicated an inability to compete in sports, resulting in capitulation and defeat.

Factor loadings in Group 2 were interpreted. The most loaded factor was F2_{G1} – “Value-meaning disposition” which demonstrated the prevalent dispositional positive mental state of young male athletes and, in terms of positive and negative loads, was largely identical to Group 1. The main distinction was the presence of negative loads on the CN ($r_s=-.913$) and DS ($r_s=-.892$) scales. This factor reflected the mental state of junior male athletes who are determined to compete and win in sports.

F2_{G2} – “Responsible and expected disposition” repeated the condition interpreted in Group 1 to a large extent. The difference was due to the negative AD ($r_s=-.502$) loading. A willingness and responsible attitude toward sports activities was a positive sign, but it did not imply that such athletes would fight excessively and make every effort to win.

F3_{G2} – “Distant-confrontational disposition” was the least loaded factor associated with young athletes' dispositional negative mental state. This condition was defined by three positive loads on the scales: CN ($r_s=.927$), DS ($r_s=.917$), and SSS ($r_s=.890$) as well as one negative GAL ($r_s=-.575$). Juniors' distancing and confrontation were signs of behavior that, in both team and individual sports, reduced sports activity and, as a result, led to surrender and defeat. We note that only differences in the negative dispositional mental state were found in the studied groups. In the studied groups, the two positive dispositional mental states were formally identical.

Discussion

There are studies in the sports scientific literature that cover a wide range of issues in youth sports and student sports activities (Tereshchenko, 2014; Popovych et al., 2022b; 2022d). The gender differentiation of relevant scientific problems is also presented, as are the scientific facts, sensitive capabilities, and the mental states of juniors (Nazarenko, 2020; Plokhikh & Yanovska, 2022; Popovych et al., 2021d). Several studies have been conducted to highlight dispositional optimism in youth and adulthood (Schwaba et al., 2019). An examination of the scientific literature revealed reasons to state that the empirical study of dispositional optimistic and pessimistic mental states of junior males and females presented by us is original.

The unexpected result of junior female athletes' superiority (see Tabl. 1) in the parameters CN ($H=7.717$; $p=.005$), SSS ($H=14.049$; $p<.001$), and PR ($H=7.996$; $p=.005$), as well as junior male athletes' superiority in the parameters GAL ($H=9.041$; $p=.003$) and DS ($H=11.686$; $p<.001$). This disproved our first hypothesis, and the obtained result in a number of the specified parameters allowed us to state the fact of rejection. It is obvious that the formation and development of persons of youth age have not only great opportunities but also a significant amplitude of changes in the content parameters of the studied and related phenomena. The researchers hypothesized that there would be a trend for differences on the GAL scale, with a preference for junior male athletes, but there was no trend, however, there was a statistically significant level ($p=.003$). We substantiate that the sample of junior male athletes had a higher and clearly more stable level of life value orientations. We emphasize that junior male athletes had a slight age advantage in the parameter $M=\pm 1.32$ (average value of the distribution). This could be one of the reasons and factors limiting the research findings. At the same, we state that the sample was random, representative, and qualitatively representative of the general population. An intriguing scientific fact was that junior male athletes consistently preferred to demonstrate distancing behavior in stressful situations of sports activities. This dominant behavior served as the foundation for the negative mental state – F3_{G2} – “Distant-confrontational disposition” – during the factor analysis stage (see Table 4). This is a dangerous condition because self-isolation, isolation from the environment, and distancing do not help athletes achieve their goals or advance in their careers. Junior female athletes in stressful sports situations had a tendency to seek social support and engage in confrontational behavior, prompting them to rethink and reassess what is going on, their role, and their place in the flow of events in youth sports life. Qualitative changes promoted growth and necessitated reevaluation, but persistent reevaluation indicated instability and uncertainty. The outlined determinants, according to the results of the factor analysis (see Table 4), made it possible to ascertain the negative mental state – F3_{G1} “Protective-avoidant disposition”. Confrontation and the constant search for support, which encourage people to avoid sports, had a negative impact on individual and team performance. The empirical study of V. Plokhikh (2022) confirms our scientific facts. The researcher empirically demonstrated that young people's time perspective was limited by protective mechanisms.

The ranking of the studied parameters' correlations with the dispositional optimism/pessimism (DOp/Ps) scale by gender (see Tabl. 2 and Fig. 1) had a statistically different location, confirming the second hypothesis. We discovered a statistically significant influence of negative correlations in both samples during the comparative analysis stage (see Table 1).

The variance and factor loadings of respondents' dispositionally optimistic and pessimistic mental states differed statistically by gender (see Tabl. 3), confirming the third hypothesis. If both samples were formally identical in terms of dispositional optimistic states: $F1_{G1}$ and $F1_{G2}$ – “Value-meaning disposition”; $F2_{G1}$ and $F2_{G2}$ – “Responsible and expected disposition”, then a statistical difference was recorded for pessimistic dispositional states, the parameters of which were clarified at the beginning of the comparison (see Tabl. 1).

We claim that the empirical findings and scientific evidence provided a foundation for understanding, differentiating, and identifying the dominant dispositional optimistic and pessimistic mental states of young athletes. The ability to master this can improve psychological literacy, and sports performance, and influence sports career planning.

Conclusions

1. It has been established that the dispositional optimistic and pessimistic mental states of young athletes were the dominant mental states of the subjects of sports activities, reflecting the consideration/neglect of age characteristics, psychophysiological patterns, sensitive abilities, and psychological new formations in youth.

2. According to the H-test of Kruskal-Wallis, junior female athletes (Group 1) outperformed in terms of CN ($H=7.717$; $p=.005$), SSS ($H=14.049$; $p<.001$) and PR ($H=7.996$; $p=.005$). Junior male athletes (Group 2) outperformed in terms of GAL ($H=9.041$; $p=.003$) and DS ($H=11.686$; $p<.001$).

3. Correlation analysis and ranking of the investigated parameters were performed. Sixteen statistically significant correlations were discovered. Both samples had the same first position by rank: Group 1 – Op ($Rg1$; $r_s=.989$) and Group 2 – Op ($Rg1$; $r_s=.982$). Ranks and correlation values were used to determine the difference in location. Negative correlations of dispositional optimism/pessimism with protective mechanisms in stressful situations of sports activity were found to have a statistically significant influence – Group 1: DS ($Rg2$; $r_s=-.982$), CN ($Rg4$; $r_s=-.967$), Ps ($Rg9$; $r_s=-.929$) and Group 2: Ps ($Rg7$; $r_s=-.902$).

4. The subjects' dispositional optimistic and pessimistic mental states were constructed into two-factor structures. The following mental states characterized the sample population of junior female athletes (Group 1): $F1_{G1}$ – “Value-meaning disposition”; $F2_{G1}$ – “Responsible and expected disposition”; $F3_{G1}$ – “Protective-avoidant disposition”. A group of junior male athletes (Group 2) demonstrated the following mental states: $F1_{G2}$ – “Value-meaning disposition”; $F2_{G2}$ – “Responsible and expected disposition”; $F3_{G2}$ – “Distant-confrontational disposition”.

5. It is summarized that timely differentiation and identification of dominant mental states by coaching staff and athletes themselves can significantly increase sports psychological literacy, and affect not only local sports results but also the planning of a sports career and life position.

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