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**Original Article**

# Pre-competition expectation profiles among junior athletes in the context of altered sporting conditions

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**Abstract:**
The primary **aim** of this research was to empirically examine and substantiate the of various pre-competition expectations exhibited by junior athletes, particularly in light of altering conditions within a sporting contest.The study involved a cohort of adolescents (n=267) (*Me=16;* M=16.32; SD=±1.71). The participants were representatives of team sports such as football and volleyball, as well as individual sports such as artistic gymnastics and track and field. The empirical investigation focused on junior athletes enrolled in an educational training course at two sports schools: "LSSCY Enerhetyk" in Lviv, Ukraine and "SSSYOR №1" in Ivano-Frankivsk, Ukraine. **Methods.** Psychodiagnostic tools were employed to gauge the content parameters of both expectations and the concept of a safe competition space. Standard coefficients were applied to discern statistically significant correlations within the collected data. The categorization of pre-competition expectations was accomplished through the application of *k*-means clustering. **Results.** This research established statistically significant correlations cognitive, emotional and behavioral components of psychological safety and expectation parameters underscoring the pivotal influence of both the competition space and pre-competition expectations on actual competitive performance. The delineation of five distinct precompetition expectation types emerged: real (RTE), active analytical (AATE), moderate (MTE), passive moderate (PMTE) and unreal (UTE). The findings provided robust evidence supporting that RTE, AATE and MTE constitute favorable expectation types, contributing positively to desired outcomes. In contrast, PMTE and UTE were identified as negative types, exhibiting a detrimental impact on achieving desirable results. Notably, the study demonstrated and substantiated the heightened risk associated with PMTE establishing it as the most perilous type of expectation for athletes engaged in competitive activities. **Discussion and conclusions.** This study revealed a significant negative correlation, particularly the cognitive component of psychological safety (CC), with expected status (ESA). This finding underscores the increased risk associated with this psychological configuration because it promotes a closed convergent position with subsequent distancing. Such a psychological state, coupled with a diminished awareness of competition activity (ACA), consistently leads to tactical errors in both offensive and defensive actions among athletes. These errors, in turn, disrupt team interaction and hinder the execution of a game plan. It was generalized that the identified precompetition expectation types among junior athletes, especially under altering sporting conditions, carry a distinctive scientific novelty. Moreover, these findings can be practically operationalized in the realm of educational training preparation.
**Key words: safe space, stress-factor, mental health, competitiveness, identity, self-actualization**.

## Introduction

Athletes' competition activity is an important component of sporting activities aimed at demonstrating the achieved level of athletes' preparedness using techniques for evaluation and comparison of achievements of individual participants and teams. A competition activity has a result-directed orientation which allows determining a winner or a tie in an honest and open contest using such technical means as video replay (VAR) and others, through observations in the form of sports arbitrage and registration of important sports units of measurement (for instance, a goal, fall, blow, score etc). Thorough planning of sport events and the most advanced technical equipment are not always capable of organizing them according to the competition schedule or contest calendar. Sometimes there are factors determining changed conditions of a competitive activity. Changed conditions of a competition activity include everything that affects organization and spatio-temporal


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coordinates of an athlete's contest or performance. Unreadiness of a sports field or a sports ground for a contest, a lack of necessary technical means, absence of spectators at the contest (penalizing sports arenas because of non-compliance with safety and sanitary standards, local remedial works in individual sectors, the ongoing pandemic) can make corrections to competition calendars. Sometimes contests are held according to a shortened formula, i.e. a match lasts less, boxing rounds have a contest formula differing from a traditional one etc). This is not a complete list of changed conditions of a competition activity. They also involve force majeure events such as a martial law, changes in the time of competitions or mandatory breaks in sport competitions because of the danger of military damage and information about a bomb threat. All these changed conditions have an impact on an increase in stressfulness of a competition activity. At the same time, the aim of changed conditions is to create safe competition space. Thus, we can generalize that we struggle for safety of competition space at the expense of an increase in stressfulness for the subjects of sporting activities.

Nine interrelated complementary components were appropriately identified in the structure of a competition activity by I. Synigovets (2011). We should consider them since they are of interest in the context of the research and operationalization of the results in educational and training activities of juniors. The first component is systemic-holistic opposition of athletes. The second component comprises tactical actions during attack and defense which determine general tactics of a game – a game of attack, defense or a combined model of a game. The third component comprises group tactical actions in attack – combinations of attack, and group tactical actions in defense, i.e. combinations of defense. The fourth component of the structure comprises individual tactical actions in attack and defense. Emphasis is put on an athlete's individual technical potential in order to create a local advantage in an individual game zone. The fifth component comprises game techniques. Thus, we have the following sequence in the development of competition actions: team – group – individual (tactic) – game methods (technique). The sixth component comprises athletes' physical conditions which are their movement potential that ensures efficiency and reliability of tactical-technical actions in a competition activity: high-speed, physical, high-speed and physical, endurance, coordination abilities, flexibility. The seventh component comprises athletes' mental states and qualities, the level of their development and manifestation. This component is crucial if the levels of sport mastery are identical. The eighth and ninth components comprise functional abilities and morphological characteristics of the body which ensure reliability and efficiency of technical-tactical actions in the course of a sporting contest (Synigovets, 2011). It becomes obvious that changed conditions can have a considerable impact on the component of a competition activity which characterizes group tactical actions in attack and defense. The team which can overcome stressogenic factors cohesively becomes stronger. If stressogenic factors in the form of changed conditions of a competition have a considerable negative impact on the game quality and tactic, as experience shows, it is difficult to win in such a contest due to the mastery of individual players. Sometimes there are instances when an individual athlete – a hero who achieved a desirable result – can determine the final score of a contest under such conditions. It is obvious that resilience, hardiness (Popovych et al., 2020c), self-regulation readiness (Popovych et al., 2022e; 2022f; Prokhorenko et al., 2023), self-actualization ability (Popovych et al., 2022b) and an optimal condition of a competition activity (Alekseev, 2006) will come to the fore in the representatives of individual and team sports under changed conditions.

Athletes' pre-competition expectations are closely related to self-regulation readiness. There are studies examining psychological content parameters and differences of pre-competition expectations of the representatives of team sports: football, mini-football, volleyball and handball (Popovych et al., 2020d). Researchers found no significant differences in pre-competition expectations of the representatives of different team sports, but identified positive and negative tendencies. We should pay attention to the fact that in our research there are changed competition conditions which bring the work of expectations to the fore (Popovych et al., 2021a), since they are a powerful mechanism of an athlete's self-regulation readiness (Popovych et al., 2020b). It should also be emphasized that studies on safe competition space prove a statistically significant correlation of psychological safety with subject- and result-directed motivational orientation (Blynova et al., 2022b; Kalenchuk et al., 2023; Popovych et al., 2020a; Zhuravlova et al., 2023). Consideration of cognitive, emotional and behavioral components of the parameters of safe competition space (Baeva et al., 2011) shows content features of this phenomenon. In scientific literature there are studies revealing the importance of an anticipatory factor in professional activities and its connection with success and space safety (Nosov et al., 2021a; 2021b; Plokhikh & Yanovska, 2022). There are attempts to use artificial intelligence in forecasting competitive efficacy of junior athletes (Nagovitsyn et al., 2023).

The above structure of a competition activity suggested by I. Synigovets (2011) incentivizes us to think over the seventh component which comprises athletes' mental states and qualities. There is a dominant belief that, in difficult stressogenic situations, an individual is able to reproduce automated actions (Selye, 1976; Nosov et al., 2020a; 2020b), i.e. the achieved level of sport mastery is very important in such situations. However, dominant mental states in stressogenic dimensions may have a different content (Popovych et al., 2021c; 2023a). It was proved that a value-based component is important during sports competitions (Popovych et al., 2021b), the mental state of risky activities (Popovych et al., 2022a), educational-professional activities (Popovych et al., 2019a; Popovych & Blynova, 2019). The identified advantage of pre-competition mental states of

expectation of winners over losers is interesting in the context of our research. "Value-based self-regulation" dominates in winners, "Pragmatic-moderate self-regulation" dominates in losers (Popovych et al., 2021d). Changed conditions of a competition activity are accompanied by stressogenic factors which increase athletes' tiredness and exhaustion. It was proved that tiredness affects the speed and accuracy of footballers' kicking the ball (Ferraz et al., 2011).

The study by J. Hagan et al. (2017) examines reactions of elite athletes to competition anxiety. It was found that severe stress caused an increase in intensity and frequency of cognitive and somatic symptoms in the examined athletes. Special attention should be paid to a psycho-physiological and morphological component which suffers most of all as a result of permanent changed conditions because of athletes' cardiovascular diseases (Hrynkiv & Baranetskyi, 2006; Moulson et al., 2023) and requires complex treatment and scientifically substantiated rehabilitation and psychological accompaniment (Fomych, 2023; Popovych et al., 2022c).

Pre-competition expectation profiles of junior athletes under changed conditions of a sporting contest are regarded as determination of external factors affecting organization and spatio-temporal coordinates and, consequently, increasing stressfulness of competitions, but aiming at creating safe conditions of competition space.

*Hypothesis.* We assume that identification of the pre-competition expectation profiles of junior athletes under changed conditions of a sporting contest will allow finding important scientific facts which should be operationalized in educational-training preparation.

*Aim.* To determine and substantiate empirically the pre-competition expectation profiles of junior athletes under changed conditions of a sporting contest.

**Material and methods**

*Methodology.* Methodological foundations of the research on the pre-competition expectation profiles of junior athletes under changed conditions of a sporting contest comprise basic concepts of organization and methods for holding individual competitions and sports games **(**Oliynyk & Voitenko, 2020; Synigovets, 2011**);** psychological regularities of an athlete's expectations **(**Popovych et al., 2020d**);** psychological regularities of adolescence **(**Popovych et al., 2021e).

While developing a plan of the empirical research using a substantial empirical dataset which is necessary for clustering, we paid attention to a number of modern studies that are directly or indirectly related to the research subject (Olefir & Bosniuk, 2023). Since the research participants were juniors going to sports schools, special attention was paid to the regularities of educational-training preparation (Cretu et al., 2021; Galan et al., 2018; 2021; Kobets et al., 2021a; 2021b; Marques et al., 2011; Paliichuk et al., 2018). We also considered modern studies on adaptive skills of an individual under changed conditions of activity (Blynova et al., 2022a; Halian, 2022; Vavryniv & Yaremko, 2022), the effect of extreme conditions and psychogenic factors (Khraban et al., 2022; Kuzikova et al., 2023; Mamenko et al., 2022; Zinchenko et al., 2020; 2022; 2023). Value-based transformations of adolescents in terms of well-being (Halian, 2022; Hulias & Hoian, 2022; Karpenko & Klympush, 2023), personal responsibility (Zarichanskyi et al., 2023) and professional identification (Shevchenko et al., 2023) were taken into consideration.

*Participants.* The research involved juniors (n=267) (*Me=16;* M=16.32; SD=±1.71) representing team sports (football and volleyball) and individual sports (artistic gymnastics and track and field). At the time of the research the junior athletes did educational-training preparation at the following sports schools: "LSSCY Enerhetyk" in Lviv, Ukraine and "SSSYOR №1" in Ivano-Frankivsk, Ukraine. n=107 (40.07%) of male athletes and n=160 (59.93%) of female athletes participated in the research.

*Procedures and instruments.* The modified authors' questionnaire "The level of expectations of sportsmen" (LES) (Popovych et al., 2020d) combining three basic scales – awareness of a competition activity (ACA), expected attitude towards a competition activity (EACA), expected results of a competition activity (ERCA) and one integral scale – then general level of expectations (GLE) – is the basic psycho-diagnostic instrument. Since the questionnaire is based on the statement that mental regulation of sporting activities is realized through an athlete's cognitive, emotional and behavioral readiness for expected events, the following method was purposefully chosen, with identical components in the context of psychological safety of competition space. The modified questionnaire "Psychological safety of competition space" (PSCS) (I. Baeva et al., 2011) with eleven scales was used to determine the levels of cognitive (CC), emotional (EC) and behavioral (BC) components. The respondents made measurements of competition space by means of judgements: positive, negative or neutral. The modeled experimental competition situation was a real situation of a competition activity that ensured a high level of ecological validity of the research. Thus, empirical measurements were made before and after competitions that allowed establishing appropriate examination of the characteristics of the athletes' expectations. The authors' tool "Expected Competition Situation" (ECS) (Popovych, 2017) and "Realization of Competitive Expectations" (RCE) (Popovych, 2017) was applied. The scales of the method allowed identifying characteristics of internality, externality, activeness, passiveness, openness, closedness, objectiveness and non-objectiveness. Another method of the authors "Expectometry" (EM) (Popovych, 2017) was used to determine

the coefficient of an athlete's expectations (CAE) and the expected status of an athlete (ESA). The coefficient of homogeneity of the responses by all the scales did not exceed the satisfactory limits and was not less than .70.

*Organization of research.* The program of the empirical research was realized in 2022. The results were processed and the working hypothesis was tested in the first half of 2023. The organizers agreed the collection of empirical data with the administrations of sports schools and gained support of the Ethics Committees. The data were collected anonymously. The participants were informed and participated in the research voluntarily. The researchers chose such individual and team contests which had changes in competitions: air raid alerts (six times), absence of spectators at all the team games (six times), a change in the competition field (once) and a change in the competition formula (once).

*Statistical analysis.* The program "IBM SPSS Statistics" version 29.0.0.0 (241) was crucial in statistical analysis and determination of significant parameters. Standard coefficients were applied in the course of the research. Content analysis with coding matrices was applied. The levels of manifestations of the characteristics of the athletes' expectations were determined by the formulas. Factor analysis ANOVA was used. Pre-competition expectation profiles were identified by means of *k*-means clustering. Differences at the level not lower than $p \leq .05$ were considered statistically significant.

**Results**

Relevant parameters of the examined phenomena were selected according to the methodology and plan of the empirical research to identify pre-competition expectations of junior athletes. Tabl. 1 gives descriptive frequency characteristics by all the measurements of the selected psycho-diagnostic instruments.

**Table 1.** Descriptive frequency characteristics of the parameters of the junior athletes' pre-competition expectations (n=267)

| Scale | min | max | M | SD |
|---|---|---|---|---|
| **"Level of expectations of sportsmen"** (LES) (Popovych et al., 2020d) | | | | |
| ACA | 9.00 | 23.00 | 17.88 | 3.21 |
| EACA | 9.00 | 18.00 | 14.79 | 1.91 |
| ERCA | 18.00 | 52.00 | 36.61 | 8.42 |
| GLE | 40.00 | 91.00 | 70.22 | 12.47 |
| **"Psychological safety of competition space"** (PSCA) (I. Baeva et al., 2011) | | | | |
| CC | 10.00 | 22.00 | 16.67 | 4.01 |
| EC | 11.00 | 25.00 | 17.89 | 4.92 |
| BC | 14.00 | 31.00 | 24.12 | 9.01 |
| **"Expected Competition Situation"** (ECS), **"Realization of Competitive Expectations"** (RCE) (Popovych, 2017) | | | | |
| IAE/EAE | .10 | .86 | .48 | .22 |
| AAE/PAE | .10 | .85 | .49 | .21 |
| OEA/CEA | .20 | 1.11 | .73 | .23 |
| OAE/NAE | .20 | 1.26 | .75 | .23 |
| **"Expectometry"** (EM) (Popovych, 2017) | | | | |
| CAE | .06 | .91 | .44 | .16 |
| ESA | .00 | .54 | .21 | .13 |

Note: min – minimum of distribution; max – maximum of distribution; M – arithmetic mean of distribution; SD – mean-square deviation of distribution; ACA – awareness of a competition activity; EACA – expected attitude towards a competition activity; ERCA – expected result of a competition activity; GLE – general level of expectations; CC – cognitive component; EC – emotional component; BC – behavioral component; IAE – internality of an athlete's expectations; EAE – externality of an athlete's expectations; AAE – activeness of an athlete's expectations; PAE – passiveness of an athlete's expectations; OEA – openness of expectations of an athlete; CEA – closedness of expectations of an athlete; OAE – objectivity of an athlete's expectations; NAE – non-objectiveness of an athlete's expectations; CAE – coefficient of an athlete's expectations; ESA – expected status of an athlete.

The obtained descriptive frequency characteristics reflect the range of distribution of the measurements from the minimum (min) to the maximum (max) values. In order to find and compare the data with the average statistical norms, we used the mean of distribution (M) and the mean squared deviation (SD). We can state that comparison of the obtained empirical results with the calculated ranges of the data and with the results obtained by other authors in related studies on sports did not show statistically significant differences. We observed only positive tendencies in the sample of the athletes related to the parameters of internal characteristics and orientation towards a result. Negative tendencies in the parameters of awareness of a competition activity and the coefficient of expectations were also registered (Popovych & Blynova, 2019b).

We should focus on the application of "Expected Competition Situation" (ECS) (Popovych, 2017) and "Realization of Competitive Expectations" (RCE) (Popovych, 2017) with the following organization of content

analysis. The respondents described their expectations and mental states before and after competitions quite laconically, using a few sentences. There were changed conditions before the immediate performance, therefore we managed to cover a real social-psychological situation of the research by means of content analysis. The number of sentences registered in the responses was from one to twelve. It is quite interesting that the female athletes' answers were more extensive, than those of the male athletes. Obviously, it is somehow related to anxiety and coping strategies in difficult stressful situations. This assumption was not our hypothesis, and it requires testing. It was found that 29.23% of the respondents have a high level of IAE; 23.12% of the respondents have a high level of EAE, that poses confusion. High levels of activeness and passiveness have an approximately similar distribution by a high level: AAE=30.12% and PAE=23.23%. Equality was registered in openness and closedness of the respondents' expectations – 24.23% and 24.46%. A high level of inadequacy of expectations NAE=34.23 posed confusion. The indexes of adequacy of expectations are lower – 28.12%. In scientific literature there are no data on characteristics of athletes' expectations under changed conditions of a competition activity, therefore there is no possibility to compare. High results of NAE can be explained by the fact that changed conditions made significant negative corrections to the plans and probable scenarios of the events in the competition filed, that caused such a high level of discrepancy. We can state that comprehension of a probable scenario of events is very important for achieving a desirable result, at the same time other traits such as flexibility, stress resistance and resilience come to the fore under changed conditions.

The following step according to the plan of our empirical research was to determine correlations of the parameters of expectations with the measurements of safe competition space (Tabl. 2).

**Table 2.** Correlations of the parameters of expectations with the measurements of safe competition space (n=267)

| Parameters of expectations | Components of safe competition space | | |
|---|---|---|---|
| | CC | EC | BC |
| ACA | .378** | .202 | .242* |
| EACA | .212 | .324** | .224* |
| ERCA | .194 | .233* | .433** |
| GLE | .234* | .245* | .241* |
| IAE/EAE | .275* | .278* | .378** |
| AAE/PAE | .268* | .288* | .388** |
| OEA/CEA | .271* | .279* | .177 |
| OAE/NAE | .188 | -.018 | .218* |
| CAE | .406** | .106 | .134 |
| ESA | -.278* | -.012 | .172 |

Note: CC – cognitive component; EC – emotional component; BC – behavioral component; ACA – awareness of a competition activity; EACA – expected attitude towards a competition activity; ERCA – expected result of a competition activity; GLE – general level of expectations; IAE – internality of an athlete's expectations; EAE – externality of an athlete's expectations; AAE – activeness of an athlete's expectations; PAE – passiveness of an athlete's expectations; OEA – openness of expectations of an athlete; CEA – closedness of expectations of an athlete's; OAE – objectivity of an athlete's expectations; NAE – non-objectivity of an athlete's expectations; CAE – coefficient of an athlete's expectations; ESA – expected status of an athlete; * – p<.050; ** – p<.010.

Correlation analysis by Student's t-Test ($r_s$) showed that the components of safe competition space have the following number of significant correlations ($p \leq .05$; $p \leq .010$): a cognitive component – seven; an emotional component – six; a behavioral component – seven. Statistically significant correlations emphasize the importance of the impact of expectations which were formed before a competition. The strongest positive correlations are characteristic of a cognitive component with the CAE ($r_s$=.406; $p \leq .010$) and the ACA ($r_s$=.378; $p \leq .010$). One negative correlation was registered with the ESA ($r_s$=-.278; $p \leq .050$). An emotional component of safe competition space has the strongest correlation with EACA ($r_s$=.324; $p \leq .010$) and there are no statistically significant negative correlations. The strongest positive correlations are characteristic of a behavioral component with the ERCA ($r_s$=.433; $p \leq .010$), IAE/EAE ($r_s$=.378; $p \leq .010$) and AAE/PAE ($r_s$=.388; $p \leq .010$). There are also no statistically significant negative correlations.

The final part of the research aims to identify the pre-competition expectation profiles of junior athletes under changed conditions of a sporting contest. The types of expectations were identified using cluster analysis by *k*-means clustering. The general level of an athlete's expectations (GLE) was chosen as the main indicator of clustering, the rest twelve parameters reflected the content features of the examined phenomenon. It was empirically determined that the least acceptable number of respondents in a cluster is $n \geq 21$. Factor analysis with the Varimax rotation was used when preparing the empirical dataset for clustering. It was found that the empirical data have a satisfactory level of homogeneity, i. e. the results of the test for sampling adequacy KMO=.623 (higher than the recommended level .500) and Bartlett's test of sphericity are significant with p<.001. The initial cluster centers are given in Tabl. 3.

**Table 3.** Initial cluster centers (n=267)

| Parameters of clusters | Cluster 1 (n=27) | Cluster 2 (n=39) | Cluster 3 (n=46) | Cluster 4 (n=90) | Cluster 5 (n=65) |
|---|---|---|---|---|---|
| GLE | 90.00 | 82.00 | 81.00 | 70.00 | 43.00 |
| ACA | 23.00 | 20.00 | 17.00 | 13.00 | 11.00 |
| EACA | 18.00 | 17.00 | 14.00 | 12.00 | 10.00 |
| ERCA | 50.00 | 52.00 | 38.00 | 18.00 | 24.00 |
| CC | 16.00 | 14.00 | 12.00 | 11.00 | 15.00 |
| EC | 25.00 | 19.00 | 17.00 | 14.00 | 10.00 |
| BC | 28.00 | 23.00 | 20.00 | 18.00 | 15.00 |
| IAE/EAE | .80 | .65 | .68 | .64 | .14 |
| AAE/PAE | .82 | .65 | .68 | .64 | .14 |
| OEA/CEA | .81 | .67 | .62 | .57 | .16 |
| OAE/NAE | 1.01 | 1.12 | 1.00 | 1.00 | .60 |
| CAE | .18 | .70 | .16 | .54 | .41 |
| ESA | .50 | .44 | .32 | .12 | .02 |

Note: GLE – general level of expectations; ACA – awareness of a competition activity; EACA – expected attitude towards a competition activity; ERCA – expected result of a competition activity; CC – a cognitive component; EC – emotional component; BC – behavioral component; IAE – internality of an athlete's expectations; EAE – externality of an athlete's expectations; AAE – activeness of an athlete's expectations; PAE – passiveness of an athlete's expectations; OEA – openness of expectations of an athlete; CEA – closedness of expectations of an athlete; OAE – objectivity of an athlete's expectations; NAE – non-objectivity of an athlete's expectations; CAE – coefficient of an athlete's expectations; ESA – expected status of an athlete.

Clustering allows optimizing differences between the measured parameters and making them insignificant within a cluster, and statistically significant – in comparison with other clusters. Tabl. 4 shows the final cluster centers.

**Table 4.** Final cluster centers (n=267)

| Parameters of clusters | Cluster 1 (n=27)10.11 | Cluster 2 (n=39)14.61 | Cluster 3 (n=46)17.23 | Cluster 4 (n=90)33.71 | Cluster 5 (n=65)24.34 |
|---|---|---|---|---|---|
| GLE | 83.00 | 72.00 | 71.00 | 75.00 | 62.00 |
| ACA | 19.00 | 16.00 | 13.0 | 9.0 | 14.0 |
| EACA | 15.00 | 14.00 | 11.0 | 9.0 | 12.0 |
| ERCA | 42.00 | 44.00 | 30.0 | 24.0 | 20.0 |
| CC | 20.00 | 18.00 | 16.00 | 13.00 | 11.00 |
| EC | 21.00 | 15.00 | 13.00 | 10.00 | 14.00 |
| BC | 23.00 | 19.00 | 17.00 | 14.00 | 18.00 |
| IAE/EAE | .73 | .56 | .60 | .61 | .34 |
| AAE/PAE | .74 | .58 | .59 | .61 | .48 |
| OEA/CEA | .71 | .57 | .58 | .58 | .45 |
| OAE/NAE | .71 | .67 | .68 | .70 | .61 |
| CAE | .36 | .34 | .33 | .36 | .35 |
| ESA | .46 | .39 | .28 | .06 | .13 |

Note: GLE – general level of expectations; ACA – awareness of a competition activity; EACA – expected attitude towards a competition activity; ERCA – expected result of a competition activity; CC – cognitive component; EC – emotional component; BC – behavioral component; IAE – internality of an athlete's expectations; EAE – externality of an athlete's expectations; AAE – activeness of an athlete's expectations; PAE – passiveness of an athlete's expectations; OEA – openness of expectations of an athlete; CEA – closedness of expectations of an athlete; OAE – objectivity of an athlete's expectations; NAE – non-objectiveness of an athlete's expectations; CAE – coefficient of an athlete's expectations; ESA – expected status of an athlete.

The final cluster centers show the boundaries of the examined empirical dataset which is referred to a certain cluster. Clusters are particular visual taxonomies (Lloyd, 1957), which broaden and enrich knowledge, in sport psychology in our case. The cluster characteristics are given below.

**Cluster 1 (Type I)** has the smallest number of respondents (n=27) and corresponds to the smallest acceptable number (n≥21). The juniors in this cluster have a high general level of expectations (GLE, 90.00-83.00); high levels of the parameters of expectations: ACA (23.00-19.00), EACA (18.00-15.00) and ERCA (50.00-42.00); medium and high parameters of psychological safety of competition space: CC (16.00-20.00), EC (25.00-21.00), BC (28.00-23.00); high and medium levels of the characteristics of expectations: IAE/EAE (.80-.73), AAE/PAE (.82-.74), OEA/CEA (.81-.71), OAE/NAE (1.01-.71) and medium levels of expectometric parameters: CAE (.18-

.36), ESA (.50-.46). A high level of expectations in sporting activities and internality, activeness and openness are differentiated characteristics of pre-competition expectations of this type.

**Cluster 2 (Type II)** comprises the second largest group of respondents (n=39). The research participants of this cluster have a medium general level of expectations (GLE, 82.00-72.00); medium and high levels of the parameters of expectations: ACA (20.00-16.00), EACA (17.00-14.00) and ERCA (52.00-44.00); medium and high parameters of psychological safety of competition space: CC (14.00-18.00), EC (19.00-15.00), BC (23.00-19.00); low levels of the characteristics of expectations: IAE/EAE (.65-.56), AAE/PAE (.65-.58), OEAE/CEA (.67-.57), OAE/NAE (1.12-.67) and medium levels of expectometric parameters: CAE (.70-.34), ESA (.44-.39).

**Cluster 3 (Type III)** comprises the medium number of respondents (n=46). The juniors representing this type have a medium general level (GLE, 81.00-71.00); medium and high levels of expectations: ACA (17.00-13.00), EACA (14.00-11.00) and ERCA (38.00-30.00); medium parameters of psychological safety of competition space: CC (12.00-16.00), EC (17.00-13.00), BC (20.00-17.00); low levels of the characteristics of expectations: IAE/EAE (.68-.60), AAE/PAE (.68-.59), OEA/CEA (.61-.58), OAE/NAE (1.00-.68) and medium levels of expectometric parameters: CAE (.16-.33), ESA (.32-.28).

**Cluster 4 (Type IV)** is the largest one by the number of respondents (n=90). The research participants of this type also have medium indexes, however, somewhat lower indexes of the general level of expectations (GLE, 70.00-75.00); indexes of medium and low levels of expectations: ACA (13.00-9.00), EACA (12.00-9.00) and ERCA (18.00-24.00); medium and low parameters of psychological safety of competition space: CC (11.00-13.00), EC (14.00-10.00), BC (18.00-14.00); low levels of the characteristics of expectations: IAE/EAE (.64-.61), AAE/PAE (.64-.61), OEA/CEA (.57-.58), OAE/NAE (1.00-.70) and low levels of expectometric parameters: CAE (.54-.36), ESA (.12-.06).

**Cluster 5 (Type V)** is the second cluster by the number of respondents (n=65). The juniors of this type have a low general level of expectations (GLE, 43.00-62.00); dominant low parameters of expectations: ACA (11.00-14.00), EACA (10.00-12.00) and ERCA (24.00-20.00); low parameters of psychological safety of competition space: CC (15.00-11.00), EC (10.00-14.00), BC (15.00-18.00); low and medium levels of the characteristics of expectations: IAE/EAE (.14-.34), AAE/PAE (.14-.48), OEA/CEA (.16-.45), OAE/NAE (.60-.61) and low levels of expectometric parameters: CAE (.41-.35), ESA (.02-.13).

The pie-chart given in Fig. I visualizes the pre-competition expectation profiles of the junior athletes under changed conditions of a sporting contest.

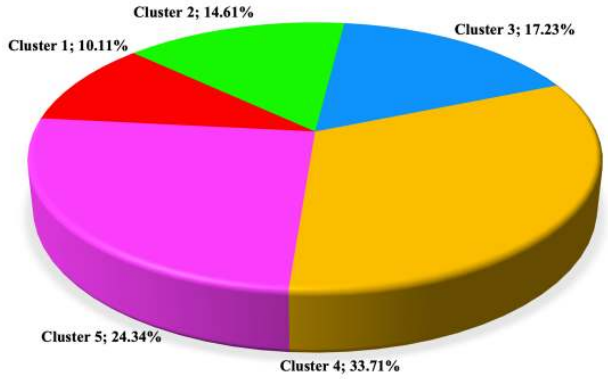


**Figure I.** Pie-chart of the pre-competition expectation profiles of junior athletes under changed conditions of a sporting contest (n=267)

*K*-means clustering divided the empirical dataset of the examined parameters of pre-competition expectations into five clusters. The discussion contains characteristics and explanations of each cluster which corresponds to a certain type of pre-competition expectations of junior athletes under changed conditions of a sporting contest.

**Discussion**

In scientific literature examining sport issues there are studies on pre-competition expectations of athletes in team sports (Popovych et al., 2020d; 2021d), on the importance of developing individual-typological features of the subjects of sporting activities (Popovych et al., 2022d; Wojciechowska-Maszkowska et al., 2020). Our scientific paper differs from other studies since it presents a successful attempt to examine pre-competition expectations **of** junior athletes under changed conditions of a sporting contest. It is worth mentioning that the research involved representatives not only of team sports but also individual sports. Moreover, for the first time the research measured expectations under changed of organizational and spatio-temporal conditions of a competition activity. This issue makes it necessary to consider the factors of safety but, as experience shows, there is a simultaneous increase in the impact of stressogenic factors on the subjects of a competition activity. It should be emphasized that success in the standings (golden medals, relegation/no relegation to a lower division),

qualifications for the Olympic Games and World Forums can depend on one meeting/contest not only in junior sports, but also in competitions of professional athletes and elite professional teams. We think that the suggested problems can arouse interest in coaching staff, sports analytics and psychologists.

Identification of the pre-competition expectation profiles of young athletes under changed conditions of sporting contest is given below.

**The real type of expectations (RTE)** – Cluster 1 (Type I). This type is the best variant of well-formed pre-competition expectations which have high parameters of the expected self-regulation readiness for probable scenarios of events (see Tabl. 3 and 4). The respondents do not ignore psychological safety of competition space (no risky adventurism). They have a mature worldview with the dominance of a value-based component of mental states. Expectations of such juniors have high indexes of internality, activeness and openness. Openness of the worldview of the respondents with the RTE is confirmed in the studies on limitation of psychological defenses in cognitive activity of adolescence (Plokhikh, 2022). In other words, openness induces higher cognitive activity. We assume that the ability to handle oneself, be open, think and make adequate decisions creates a competitive advantage over a competitor in a stressful situation (changed conditions are considered to be a stressful situation). Fear paralyses thoughts and behavior. In turn, the statistically significant correlation of emotional intelligence with motivational orientation of athletes is an argument I. Popovych et al. (2023b).

**The active analytical type of expectations (AATE)** – Cluster 2 (Type II). It is an optimal variant of the formation of pre-competition expectations which have high and medium levels of the parameters of the expected readiness and psychological safety of a competition space (see Tabl. 3 and 4). An analytical component in tactical-technical actions of attack and defense, and timeliness in making decisions are dominant. This aspect is confirmed in the research on time competence (Plokhikh, 2023). AATE is almost equal to the previous type of expectations (RTE) in achieving a victory result. Expectations of the respondents of this type are characterized by internality, activeness and openness.

**The moderate type of expectations (MTE)** – Cluster 3 (Type III). It is the worst type of pre-competition expectations. The respondents have medium levels of the parameters of the expected readiness (see Tabl. 3 and 4). They have an unclear idea of probable scenarios of events which can lead them to the sports result which will satisfy them. There is some sports adventurism which encourages athletes to ignore the standards of psychological safety, but sometimes it can be justified. Expectations have characteristics which are somewhat ambivalent and depend on a certain situation: internality/externality, activeness/passiveness, openness/closedness. Non-objective expectations start dominating in this type, tactical-technical actions have faults in attack and defense.

**The passive moderate type of expectations (PMTE)** – Cluster 4 (Type IV). It is the most dangerous type of athletes' expectations in a competition activity. Passiveness of some athletes, unwillingness to take the initiative in order not to make a mistake, to meet cautious expectations of a coach, not to get extra penalty points and warnings make many participants of competitions act cautiously and, unfortunately, with no results. Passiveness does not encourage risky adventurous actions aimed at the draw game or the result which will allow maintaining a good reputation ("the goal of prestige"). Such athletes often "finish" contests when they notice that no result can be achieved, without using the final attempt. Low and sometimes medium levels of expectations cause dominant passive states in a competition activity in the respondents with this type. The characteristics of expectations are external, passive, open/closed and the level of non-objective manifestations is high (see Tabl. 3 and 4). It was observed that a significant negative correlation of a cognitive component of psychological safety with the expected status ESA is the most dangerous psychological formation ($r_s$=-.278; $p \leq .050$). It encourages a closed convergent position of some athletes with further distancing. Since the level of awareness of a competition activity (ACA) is low, there is a sequence of group tactical mistakes in actions of attack and defense that, in turn, destroys team interactions and does not contribute to realization of a game plan.

**The unreal type of expectations (UTE)** – Cluster 5 (Type V). It is the final undesirable type of pre-competition expectations. At first sight, the respondents with this type of expectations make a systemic mistake or a number of mistakes which cannot ensure a desirable result. The research showed that low empirical indexes of the expected readiness, psychological safety with a situational evaluation of a probable course of events (see Tabl. 3 and 4) encourage serious tactical-technical mistakes in attack and defense. The respondents with this type should not be characterized as passive, sometimes they are active but it does not create an advantage in a competition field, since their actions are not coordinated. The respondents with UTE can achieve success accidentally or in team sports due to individual mastery of some players. Subjects of a competition activity with UTE should reconsider their attitude towards sporting activities radically. The t pre-competition expectation profiles RTE, AATE and MTE belong to a set of favorable types which can ensure a desirable result. The pre-competition expectation profiles PMTE and UTE are negative types which can lead to a team success when a player with this type of expectations is a reserve player (without active participation in a competition field) or accidentally. As a rule, athletes with PMTE and UTE do not achieve a desirable result. Such athletes are not desirable even as reserve players because they participate in common preparation for a contest and realization of pre-game plans. Consequently, their mental state can be transmitted to the entire team through psychological mechanisms of an impact.

**Conclusions**

The study substantiated that the pre-competition expectation profiles of junior athletes under changed conditions of a sporting contest are determination of external factors which affect organization and spatio-temporal coordinates and, consequently, increase stressfulness of competitions, aiming to create safe conditions of competition space.

The research determined statistically significant correlations of cognitive, emotional and behavioral components of psychological safety with the parameters of expectations ($p \leq .05$; $p \leq .010$) and emphasized the importance of the impact of safe space and expectations formed before a competition on a competition activity.

*K*-means clustering was used to identify five pre-competition expectation profiles of junior athletes under changed conditions of a sporting contest: real (RTE), active analytical (AATE), moderate (MTE), passive moderate (PMTE) and unreal (NTE) types. It was substantiated that RTE, AATE and MTE belong to a set of favorable types which can ensure a desirable result, and PMTE and UTE are negative types which do not contribute to achievement of a desirable result.

It was proved that PPTE is the most dangerous type of athletes' expectations in a competition activity, since dominant passiveness, unwillingness to take the initiative in order not to make a mistake, to meet cautious expectations of a coach, not to get extra penalty points and warnings make many participants of a competition to act cautiously and, unfortunately, with no results. In turn, it encourages risky adventurous actions in tactical-technical actions of attack and defense, and dominant passive states in a competition activity.

It was observed that the significant negative correlations of a cognitive component of psychological safety (KK) with the expected status of an athlete ($r_s$=-.278; $p \leq .050$) is the most dangerous psychological formation, since it encourages a closed convergent position of certain athletes with further distancing. As a rule, such a position in combination with a low level of awareness of a competition activity (ACA) causes group tactical mistakes in actions of attack and defense that, in turn, destroys team interactions and does not contribute to realization of a game plan.

The hypothesis was confirmed. We think that the identified pre-competition expectation profiles of junior athletes under changed conditions of a sporting contest are characterized by scientific novelty and can be operationalized in educational-training preparation.

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