

Strategies for extreme self-organization among handball players

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Abstract:

Aim: This study aims to conduct theoretical and empirical research into the strategies of extreme self-organization among handball players in competitive context. **Methods:** The research sample consisted of 34 athletes, aged 20–28 years ($Me = 22.00$; $M = 21.87$; $SD = \pm 3.64$), who had been actively involved in handball for 4–12 years and represented both women's and men's teams. Validated psycho-diagnostic tools, extensively tested in team sports research, were used. Additionally, purposeful non-participant observation was performed using standard protocols. Theoretical methods were employed to analyze, generalize, and explain the empirical results. **Results:** The research strategy included comparing the parameters of two attack lines, the first line (Group 1) and the second line (Group 2), to assess their extreme self-organization strategies. It was found that experienced handball players rely on perfectly practiced functional models of organization, focusing on permanent significant changes in spatio-temporal relations of a competitive situation. It was established that the dominant strategies are as follows: taking responsibility; self-control; problem-solving planning. It was found that the competitive strategy orientated towards social support is manifested moderately. The moderation is explained by the connection of the players' game expectations with successful functional self-realization of teammates, rather than with the emotionally colored personal self-realization. It was established that the strategy of confrontation is statistically pronounced in the experienced handball players of the first line of attack. This preference was regarded as a consequence of the functionally determined and normatively provided close physical contact with the players of the team-competitor. It was highlighted that the excessive confrontational attitude of experienced players is compensated by distancing oneself from provoking circumstances. **Discussion and conclusions.** It was established that the strategies of handball players' extreme self-organization are motivational-behavioral patterns, caused by stressogenic situations of a contest, the players' role positions on the sports ground, external and internal factors of sporting activities and organizational-content features of handball competitions. It was substantiated that the strategies of extreme self-organization of the first and second lines of attack have regular different functional-content parameters. It was proved that the obtained results of the research into the strategies of extreme self-organization possess scientific novelty and are valuable for representatives of team sports.

Key words: stressogenic conditions, defense mechanisms, health, confrontation, mental state, social notions, leadership, self-actualization.

Introduction

Handball is a team sport of higher achievements, which along with other game sports is constantly improving. Despite its more than a century-long history of development, content components of handball players' game, techniques and tactics are constantly changing and improving, and players are constantly enhancing their skills. Over the past decade, handball has been making a remarkable progress. This progress is determined by implementation of modern methodological and scientific achievements, application of the technologies of computer modelling for competitive activity, wide scale introduction of analytical-statistical tools for operational accounting and capture of game indicators. Recent advances in the area of artificial intelligence have also added new opportunities to this sport.

A number of studies show that application of an individual approach to performing certain tactical exercises

and elements at the stage of educational-training preparation has shown its effectiveness (Atwater, 2000; Barrett, 2013). It was found that the components lying in the plane of technical-tactical training depend on the psychology of an individual player, their mental resource (Popovych et al., 2022f) and the optimal state of competitive activity (Kurova et al., 2023; Popovych et al., 2019a; 2023d). At the same time, it is necessary not only to develop personal skills and predict individual potential of each player, but also to model their efficacy in teamwork. It is determined by the very philosophy of the attacking handball game (Pokrajac, 2007). Since results in handball are highly dependent on teamwork, the coordinated interaction of attack and defense, the first and second lines of attack and the goalkeeper come to the fore. There are many examples of a star team's winning over a team of stars. Team play can offset an individual superiority of certain strong competitors. Articulation of the above problems encourage conducting theoretical-empirical research into the strategies of handball players' extreme self-organization and finding content features and advantages in competitive strategies between the lines of attack and between the players by game roles.

The research by O. Solovey et al. (2022) confirms the importance of teamwork, analyzed in the context of individual superiority of players. The indicators of competitive activity of the men's national handball team of Ukraine at the European Championship of 2022 were analyzed. The high efficacy indicators include: individual completion of attacks with a throw; average maximum speed of scoring a goal; a high level of mastery in penalty throws; high individual indicators of overcoming certain distances; sufficiently high speed of movement on the sports ground. It allowed permanently observing the players of Ukraine's handball team in the top five ranking. However, a low level by the components of the team's technical-tactical actions did not allow realizing the potential of the team's play at a high level and confirming individual mastery with the team's efficiency (Solovey et al., 2022). Team efficiency requires time for enhancing teamwork, developing strengths and practicing techniques, which allow improving or overcoming weaknesses. researcher I. Synigovets (2011) analyzed the factors affecting teamwork and listed them in the following order: 1) athletes' technical level or technical arsenal; 2) tactical level or tactical arsenal; 3) operationalization of technical-tactical arsenal; 4) effectiveness of technical-tactical actions in the conditions of competitive activity; 5) the mastery of performing the assigned function on the sports ground or the game role; 6) demonstration of competitive creativity, tactical thinking, emotional intelligence, if necessary – competitive aggressiveness; 7) development of specific features, skills and abilities for playing handball; 8) functional capabilities and 9) morphological indicators, specifically for competitive activity of handball players. This list of factors is not exhaustive. It rather reflects a logical sequence of its components. There are factors which are dependent on team play, in particular, “demonstration of competitive creativity, tactical thinking, emotional intelligence, if necessary – competitive aggressiveness” and “development of specific features, skills and abilities for playing handball”. The above components require systematic team training, technical-tactical practices, prepared variants and the mastery of reading a game instantly and switching to the optimal tactical scheme in timely manner to ensure the desired result.

Other researchers R. Stasyuk et al. (2020) characterized the content features of the method “programming” in handball players' competitive activity. This method allowed systematizing the training of athletes creating an optimal model of training and competitive processes. The starting point of modelling is an individual athlete for whom a general strategy of training, uniform distribution and the dynamics of loads are determined. The purpose of this modelling is to achieve the desired performance in the planned period of time (Stasyuk et al., 2020). Combination of educational and training components in time dimensions also has a number of advantages. As shown in the studies by V. Plokhikh et al. (2024), O. Smolinska et al. (2024), N. Zavatska et al. (2023), we should not forget about organization of time perspective of an individual subject involved in team interaction.

Handball is a contact sport which is considered to be highly traumatic. Traumatism and psychogenic factors, as shown in a number of studies (Popovych et al., 2021c; Shcherbak et al., 2023), can make significant corrections to the tactical scheme of the game and have severe rehabilitation consequences (Staude et al., 2023a; 2023b; 2024). Psychological preparation of individual players and the team as a whole sometimes come to the fore in ensuring the result. This can be well observed in both individual principal competitions and the long competitive distance of the tournament. For instance, the effective play of the pivot or the winger, or the confident play of the center back and the goalkeeper can have a significant impact and affect team play. It was proved that the functional state is related to the efficiency of sporting activities (Cretu et al., 2021; Kozin et al., 2022; 2023). Athletes' efficacy is affected by individual-typological characteristics and coordinated interaction with the coach (Halian et al., 2023a; 2023b). There are studies which empirically research the role and place of psychological parameters in sporting activities (Popovych et al., 2021c; 2022e; 2023b; Tavrovetska et al., 2023). Since the research findings of the dominant mental states in various areas of human activity (Blikhar et al., 2024; Popovych et al., 2019b; 2022a; 2022c) show the importance of the internalized psycho-complexes and conditions in which they are demonstrated, there is reason to believe that the strategies of handball players' extreme self-organization are also a result of the long-term educational-training work actualized in stressogenic and critical competitive situations of the competition.

Strategies of handball players' extreme self-organization are considered to be motivational-behavioral patterns determined by stressogenic situations of the competition, game roles of the players on the sports ground,

external and internal factors of sporting activities and organizational-content features of handball competitions.

Hypothesis. We assume that: 1) the researched strategies of handball players' extreme self-organization will possess scientific novelty and be valuable for the representatives of team sports; 2) there will be statistically significant differences by the researched parameters between the handball players of the first and second lines of attack.

Aim. To conduct theoretical-empirical research into strategies of handball players' extreme self-organization in competitive dimensions of sporting activities.

Methods

Methodology. The research into strategies of extreme self-organization is based on the fundamentals of the concept of coping strategies by R. Lazarus and S. Folkman (1984). Discomfort which arises on the sports ground is considered to be disharmony between individual evaluation of the circumstances and resources available for interaction with the environment. A handball player evaluates a situation as stressogenic and develops strategies of extreme self-organization. The key principles of the concept of emotion regulation of activity (Chebykin, 2023; Chebykin et al., 2024; Karpenko et al., 2024; Popovych et al., 2023e), the work of defense mechanisms (Plokhikh, 2023), social notions, pre-game expectations (Popovych et al., 2021a; 2023c) and psychophysiological and age-related characteristics of the research sample (Hoian et al., 2024; Hrys et al., 2024; Popovych et al., 2021d; 2022b; 2022d; 2023d; Shevchenko et al., 2024; Tsiuniak et al., 2024) were taken into consideration in substantiating certain elements of the methodology.

When conducting the empirical part of the research, we studied the experience from the relevant areas of human activity in the context of an individual's self-organization under extreme conditions (Blynova et al., 2019; Mamenko et al., 2022; Nosov et al., 2021; Zinchenko et al., 2022), the impact of an individual's psychological safety on the efficiency of activity (Blynova et al., 2022; Kalenchuk et al., 2023), optimization of extreme situations by means of automation of management processes (Zinchenko et al., 2020; 2023a; 2023b), the development of modern educational and training technologies (Halian, 2024; Hudimova et al., 2021; Kobets et al., 2021a; 2021b), which are related to the issue of strategies of an individual's extreme self-organization (Kariyev et al., 2024; Moldakhanova et al., 2024; Popovych et al., 2019; Popovych & Blynova, 2019).

Participants. The sample included handball players representing professional handball clubs of the Super League and the Higher League of the Ukrainian Handball Federation. Female handball players ($n = 21$) represented two clubs: "Dniprianka" (Kherson) and Spartak (Kyiv). Male handball players ($n = 13$) also represented two clubs: "HFkHR-CSSChY1-KhAI" (Kharkiv) and "Portovyk" (Yuznyi). The sample size was $n = 34$, the age ranged from 20 to 28 years. The descriptive characteristics of the sample ($Me = 22.00$; $M = 21.87$; $SD = \pm 3.64$). The athletes have been engaged in handball continuously from four to twelve years. They are participants and prize-winners of numerous tournaments for the national, European and world championships. The athletes' qualification levels are as follows: Master of Sports, Candidate for Master of Sports and the first adult category.

Procedures and instruments. The selected psycho-diagnostic methods are valid, reliable and tested in sports research. In order to find the prevailing coping strategies, the version of the method "Way of Coping Questionnaire" ("WCQ") (Lazarus & Folkman, 1984) adapted by T. Kriukova and Ye. Kuftiak (2007) was applied. All eight scales were used to identify the strategies of the respondents' extreme self-organization, four of them were considered to be constructive: self-control (SC), taking responsibility (TR), problem-solving planning (PSP), positive reevaluation (PR); and four strategies were considered to be destructive: confrontation (C), distancing (D), search for social support (SSS) and escape-avoidance (E-A). The test contained fifty statements, to which the research participants chose one of the responses which was in the range of a four-point scale: never – "0" and often – "3". The applied scale is a unipolar semantic scale. The Cronbach (α) parameter of homogeneity is satisfactory (.759). In order to determine the resultant dimension, the scale "motivation for achieving success" from the method of the same name "MAS" (Elers, 2002), tested in the research by L. Prokhorenko et al. (2023), was used. The Cronbach (α) parameter of homogeneity was recorded at a high level (.859). The evaluation of the handball players' level of anxiety was determined using the method "Personality Scale of Manifest Anxiety" (PSMA) J. Taylor (1953) which combined fifty statements and contained the scale of the same name. The Cronbach (α) parameter of homogeneity was at a medium level (.803). The method "Self-evaluation of Emotional States" (SES) A. Wessman and D. Ricks (1966) was applied to determine the respondents' self-evaluation of their emotional state before the contest and after it. The method contains four ten-point differentiated scales: "calmness – anxiety", "energy – fatigue", "elation – depression", "self-confidence – helplessness". The integral indicator of the emotional state was used. The Cronbach (α) parameter of homogeneity was recorded at a medium level (.815).

Organization of Research. The summative research strategy with the elements of comparison of the first and second lines of attack was used. Comparison of the parameters by the handball players' game roles was performed. Obtaining the results of the empirical cross-section by the integral indicator of the emotional state before and after the contest allowed determining the amplitude and the statistical significance of the shift caused by stressfulness of the competitive situation. The randomly selected research participants, who possessed a

sufficiently high level of mastery, represented the Super League and the Major League. The empirical data were collected in February – March 2024. The organizers received the consent of the club administrations to collect empirical data. The data were collected by means of Google Forms using standardized forms of the methods. Purposeful non-participant observation was applied using standard protocols. The respondents were informed in advance. Confidentiality of personal and empirical data was maintained. This approach ensured voluntariness and frankness of responses.

Statistical Analysis. The initial data were processed with the computer program “MS Excel”. Statistical parameters were found using the application “IBM SPSS Statistics” version 29.0.0.0 (241). The data were visualized by the graphical editor “MS Word”. The following statistical parameters were used: Cronbach (α) coefficient of homogeneity, correlation coefficients Spearman (r_s), Student’s t-test, Friedman’s χ^2 -test, Kolmogorov-Smirnov λ -test. Correlations and differences at the level of $p \leq .050$ and $p \leq .010$ were considered to be statistically significant.

Results

Statistical indicators of the distinctiveness of implementation of the strategies of handball payers’ extreme self-organization were determined and given through the main descriptive frequency characteristics (Tabl. 1).

Table 1. Statistical indicators of the distinctiveness of implementation of the strategies of extreme self-organization in the group of research participants (n = 34)

Statistical parameter	Strategies of extreme self-organization							
	C	D	SC	SSS	TR	E-A	PSP	PR
<i>Me</i>	55.60	50.00	71.40	58.35	75.00	56.25	66.70	57.10
min	38.90	33.30	42.90	38.90	41.70	37.50	50.00	47.60
max	77.80	100.00	90.50	100.00	100.00	91.70	100.00	90.50

Note: *Me* – median (given in italics); min – minimum value; max – maximum value; C – confrontation; D – distancing; SC – self-control; SSS – search for social support; TR – taking responsibility; E-A – escape-avoidance; PSP – problem-solving planning; PR – positive reevaluation.

The obtained statistical parameters do not have significant differences by the measurement scales in comparison with the data obtained in other samples which are similar in a number of characteristics (Popovych et al., 2023a). It is worth noting the prevailing trends by the following scales: SC (*Me* = 71.40; min = 42.90; max = 90.50), TR (*Me* = 75.00; min = 41.70; max = 100.00).

Tabl. 2 presents statistical comparison by means of Friedman’s χ^2 -test in order to determine the distinctiveness of different combinations of strategies of extreme self-organization in the groups of research participants (n = 34).

Table 2. Statistical comparison of the distinctiveness of different combinations of strategies of extreme self-organization in the groups of research participants (n = 34)

Statistical parameter	Combinations of strategies of extreme self-organization			
	C, D, SC, SSS, TR, E-A, PSP, PR	C, D, SC, SSS, E-A, PSP, PR	C, D, SSS, E-A, PSP, PR	C, D, SSS, E-A, PR
χ^2	37.983	31.429	23.339	7.207
df	7	6	5	4
p	.000	.000	.000	.125

Note: χ^2 – Friedman’s test; df – the number of degrees of freedom; p – level of significance; Strategies of extreme self-organization: C – confrontation; D – distancing; SC – self-control; SSS – search for social support; TR – taking responsibility; E-A – escape-avoidance; PSP – problem-solving planning; PR – positive reevaluation.

According to the empirical research strategy, regularities of correlations were determined and the correlation matrix of the strategies of handball players’ extreme self-organization was created (Tabl. 3).

Table 3. Correlation matrix of the distinctiveness of the strategies of extreme self-organization in the group of research participants (n = 34)

Strategy	SP	C	D	SC	SSS	TR	E-A	PSP	PR
C	r_s	1.00							
	p								
D	r_s	.343*	1.00						
	p	.047							
SC	r_s	-.035	-.057	1.00					
	p	.845	.750						
SSS	r_s	-.188	-.245	-.086	1.00				
	p	.287	.163	.629					
TR	r_s	-.263	-.053	.413*	.169	1.00			
	p	.132	.766	.015	.339				

E-A	<i>r_s</i>	-.279	.114	-.042	.344*	.254	1.00		
	<i>p</i>	.110	.520	.814	.047	.147			
PSP	<i>r_s</i>	-.085	-.306	-.011	.567**	.232	-.004	1.00	
	<i>p</i>	.631	.078	.949	.000	.186	.984		
PR	<i>r_s</i>	.167	-.183	-.227	-.042	-.018	-.067	.126	1.00
	<i>p</i>	.345	.300	.196	.815	.920	.708	.477	

Note: SP – statistical parameter; C – confrontation; D – distancing; SC – self-controls; SSS – search for social support; TR – taking responsibility; E-A – escape-avoidance; PSP – problem-solving planning; PR – positive reevaluation; * – $p < .050$; ** – $p < .010$.

The correlation matrix demonstrated four statistically significant correlations: D ($r = .343$; $p = .047$), TR ($r = .413$; $p = .015$), E-A ($r = .344$; $p = .047$), PSP ($r = .567$; $p = .000$). The established correlations are direct.

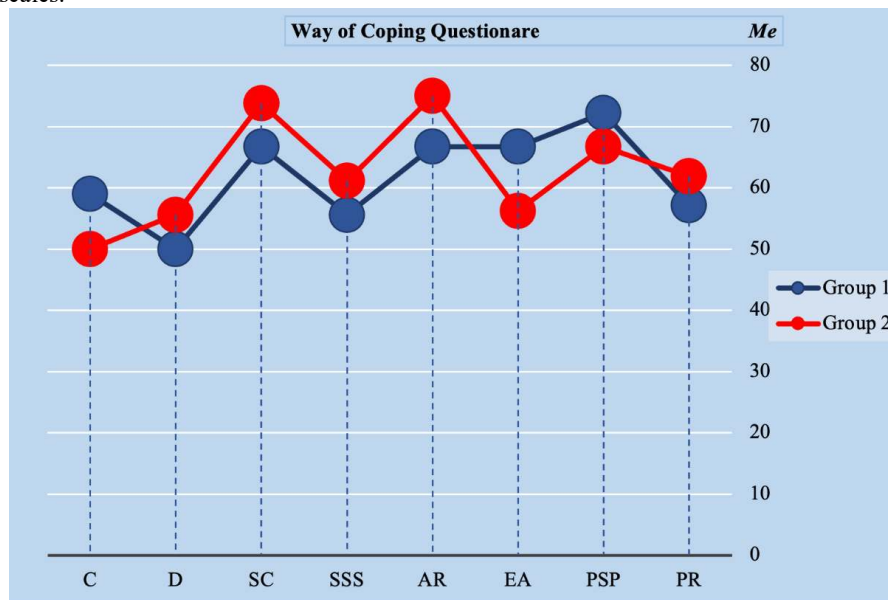
Since competitive activity has a distinctive resultant component, identifying the distinctiveness of the indicators of motivation for achieving success is of scientific interest. Statistically significant differences of the strategy of confrontation (C) and the scale of anxiety symptoms (SAS) of the handball players of the first Group 1 ($n = 13$) and the second Group 2 ($n = 18$) lines of attack, found by means of Student's t-test (Tabl. 4), are also presented.

Table 4. Statistical comparison of the distinctiveness of significant differences of the researched parameters in Group 1 and Group 2

Parameter	Group	Statistical parameter		t-test	p
		M	SD		
Strategy of confrontation (C)	Group 1	58.98	11.23	2.068	.048
	Group 2	50.93	10.31		
Motivation for achieving success (MAS)	Group 1	15.462	1.854	2.097	.045
	Group 2	17.222	2.579		

Note: Group 1 – the first line of attack; Group 2 – the second line of attack; M – mean; SD – squared deviation; t-test – Student's statistical parameter; p – level of significance.

Fig. 1 presents comparison by the researched strategies of the handball players' extreme self-organization in Group 1 and Group 2. The data underwent a z-transform procedure aimed to normalize the measurements by the researched scales.



Note: *Me* – median (given in italics); Group 1 – players of the first line of attack; Group 2 – players of the second line of attack; C – confrontation; D – distancing; SC – self-control; SSS – search for social support; TR – taking responsibility; E-A – escape-avoidance; PSP – problem-solving planning; PR – positive reevaluation.

Figure 1. Diagram of comparison of the distinctiveness of the strategies of handball players' extreme self-organization in Group 1 and Group 2

Fig. 1 presents the dynamics of the distinctiveness of the strategies of extreme self-organization by the median (*Me*). The superiority of Group 1 is statistically significant by confrontation ($t = 2.068$; $p = .048$). The rest of the compared pairs demonstrated only tendencies for superiority, by which Group 2 dominates.

In the general group of research participants ($n = 34$), there were correlations between the indicators of anxiety by the method "Personality Scale of Manifest Anxiety" J. Taylor (1953) and the distinctiveness of the

strategy “escape-avoidance” ($r_s = .349$; $p = .043$), between the indicators of motivation for achieving success and the distinctiveness of the strategy “distancing” ($r_s = .429$; $p = .011$), between the indicators of the duration of engagement in handball and the distinctiveness of the strategy “positive reevaluation” ($r_s = -.343$; $p = .047$).

Tabl. 5 presents the results of comparing self-estimation of the emotional state of the research sample ($n = 34$) before the contest and after it by means of the Wilcoxon signed-rank test (Z).

Table 5. Results of comparing self-estimation of the emotional state before and after the contest ($n=34$)

Self-estimation of anxiety	Statistical parameter			Z	p
	<i>Me</i>	min	max		
Before the contest	<i>28.00</i>	22.00	33.00	- 4.657	.000
After the contest	<i>30.50</i>	25.00	34.00		

Note: *Me* – median (given in italics); min – minimum; max – maximum; Z – Wilcoxon signed-rank test; p – the value of significance.

Discussion

Daily routine of athletes with higher qualifications is mainly organized around solution of sports problems orientated towards new achievements. When enhancing sports mastery, athletes improve their life experience, their personality, develop certain approaches and methods for solving the arising problems and, especially, overcoming critical situations on the basis of special experience. As their sports mastery is enhanced in the process of successfully overcoming their own personal limitations, experienced handball players inevitably improve certain strategies of extreme self-organization and coping strategies (Popovych et al., 2020a; 2021b; Stasyuk et al., 2020).

Step-by-step statistical determination and subsequent identification of the most pronounced strategies of the research participants’ extreme self-organization allowed finding out a basic set of the dominant strategies (see Tabl. 1 and 2). This set includes only constructive coping strategies aimed, firstly, at taking responsibility, secondly, at self-control, thirdly, at problem-solving planning. It is noteworthy that all the identified basic strategies of extreme self-organization are mainly related to improvement of individual mastery of experienced handball players. Another constructive strategy – the strategy of positive reevaluation – is important, but, to a greater extent, at the initial stages of an athlete’s development, when there is a constant need for deep re-interpretation of the gained experience as a result of mistakes, failures and defeats in competitions. At more advanced levels of mastery, when the experience contains well-formed basic functional models of organizing sporting activities, critical comprehension and necessary correction of an athlete’s game actions mostly occur almost automatically as a practiced component of the feedback contour of the activity structure. In this case, critical thinking and correction of actions are mainly related to improvement of typical functional models of solving sports problems in adjusting them to numerous spatio-temporal configurations of certain game situations. As a result, over the years of gaining sports mastery, the importance of conscious emotionally colored radical reevaluation of success or failure of game actions decreases for handball players.

The empirically identified dominant strategies of experienced handball players’ extreme self-organization sufficiently correspond to the most significant factors proposed I. Synigovets (2011) which affect athletes’ teamwork. Players’ orientation towards interpersonal support both in the list of the proposed factors and in our findings is not of paramount importance (see Tabl. 1 and 2). The reason for this correlation should be sought in the regularities of organizing a handball game.

As mentioned above, handball is a highly dynamic, emotionally and physically intense sporting activity. Furthermore, the necessity to quickly and accurately evaluate the rapidly changing current game situation and promptly plan one’s own actions requires handball players’ considerable intellectual efforts. A game situation in handball, given the permissible time of a player’s holding a ball, changes in no more than three seconds. Radical changes in a game can also occur almost instantly if the ball is taken from a competitor or by a competitor, and attack actions immediately turn into defense actions, and defense turns into attack. Under such conditions, with a constant shortage of time for evaluating the situation and adequate response, timeliness of an athlete’s actions is largely based on the previously learnt typical cognitive schemes, functional models of actions in typical spatio-temporal configurations of players’ positioning on the sports ground. On the other hand, actualization of typical game functional models from memory must consider the peculiarity of the current situation which allows developing adequate attitude and making the right decisions. This consideration for successful game activity involves not so much “embedding” typical actions in the current real situation, but rather using them creatively in the anticipatory process of a sensory-perceptive level of mental activity for identifying trends in the development of a game situation in the near future, for predicting behavior of team-mates and competitors, and for preparing one’s own version of actions (Pomytkina et al., 2024; Plokhikh et al., 2022). This self-realization of a handball player meets tactical-technical requirements of their activity and the empirically established focus on the development of a constructive strategy orientated towards problem-solving planning (see Tabl. 1).

Considerable game loads as stressors for handball players evoke emotions. As shown in the results of other studies, the reaction caused by strong emotions often appears to be inappropriate and erroneous (Plokhikh, 2023; Shcherbak et al., 2023). In this context, the findings of our research elevate the importance of well-developed

self-control over emotions for experienced handball players. A positive emotional background is an important prerequisite for fruitful activity. However, intensified emotional reactions distort evaluation of the current situation, block productive anticipation, provoke application of wrong behavioral patterns, and destroy organization and implementation of the necessary sequence of game actions.

In the typical cognitive models of organizing actions which are available in handball players' experience, different players are mainly represented by their functional resource. Expectations and personal intentions of each player are defined according to resource capabilities of their teammates and competitors. In the considerably compressed time and space constraints of the game, the overall result of the team largely depends on successful or erroneous realization of each handball player's actions. The above obviously testifies to the great importance of personal responsibility of each player for the most effective realization of their game functions in any extreme game circumstances. Therefore, it is not surprising that, according to the obtained results, the significance of the strategy of taking responsibility for personal self-organization and, at the same time, adequate game initiative appears to be relatively higher in experienced handball players among the options considered (see Tabl. 1 and 2).

The empirically established emphasis in the orientation of experienced handball players's self-organization towards the strategies mainly aimed at enhancing individual mastery does not fundamentally contradict to the team nature of handball. In the functional models learnt and implemented by athletes during intense training and competitions, teammates are represented by their game responsibilities and capabilities according to their game roles. In this variant, a player's personality appears mainly in their game functionality, and not as a carrier of certain views, features, personal experiences and mental states. The above personal manifestations mostly act as corrective impacts on the actual functional capabilities of a handball player. And, according to our findings, such corrections on the part of the request for social support can be orientated in constructive and non-constructive directions (see Tabl. 3). In the constructive variant, the request for social support appears mainly as a result of objective complications in the effective implementation of the game functionality. It should be taken into consideration when planning a game. In the destructive variant, if a player is not motivated for efficient game self-realization, has increased anxiety and avoids playing a game, the game load and responsibility are transferred to others. The above usually has a negative impact not only on the process and results of the team play, but also on the psychological climate and interpersonal relationships in the team. At the same time, the strategy of search for social support in a generalized version is secondary by its level of intensity for experienced handball players (see Tabl. 1).

Though handball is a contact and somewhat traumatic sport, confrontational strategies are not main ones for players (see Tabl. 1). However, the normative requirements for functional responsibilities in the game depending on the game role affect the preferences in choosing a confrontational strategy of extreme self-organization. This can be explained by the fact that the players of the first line of attack (Group 1) have to be in a tough physical contact with their competitors more often and more closely in comparison with the players of the second line of attack (Group 2). As it was found in our empirical research, the confrontation attitude of the players of the first line of attack is relatively high and statistically significant (see Tabl. 4 and Fig I). At the same time, given the fact that interpersonal confrontation in its emotional intensity and excessive manifestations destroys attitudes and plans for the game. Handball players with higher levels of mastery find appropriate ways to cope with aggressive intentions and develop relevant compensators. Experienced handball players develop the strategy of distancing themselves and weakening too close contact with competitors as such a compensator (see Tabl. 3).

Conclusions

It was substantiated that the strategies of handball players' extreme self-organization are motivational-behavioral patterns caused by stressogenic situations of a contest, the athletes' game roles in the sports ground, external and internal factors of sporting activities and organizational-content features of handball competitions.

It was found that experienced handball players who rely on perfectly practiced functional models of organizing their activities (even in the regularly occurring mode of time scarcity during the game) are orientated towards permanent significant changes in spatio-temporal relations of a competitive situation. First of all, constructive strategies of extreme self-organization which prepare handball players for independent effective solution of game problems are formed. The dominant strategies are as follows: taking responsibility; self-control; problem-solving planning.

It was empirically established that the competitive strategy orientated towards social support is moderately manifested in experienced handball players. This moderation is related to players' game expectations, not to personal emotionally colored self-realization, but to successful functional self-realization of teammates in a tense and highly dynamic game situation. The emphasis in players' expectations for teammates is related to the attitude towards rationally verified problem-solving planning on the basis of actualization of the known functional models or to the attitude towards avoidance of active participation in the game and is accompanied by increased anxiety.

It was found that the strategy of confrontation is considerably more pronounced in experienced handball players of the first line of attack. It was explained that distinction has a moderate level and is a consequence of

the functionally determined and normatively expected close contacts with competitors. Excessiveness in experienced handball players' confrontational attitude is compensated by distancing themselves from provoking circumstances.

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