

Research of young female handball players' self-actualizing mental states

IHOR POPOVYCH¹, IHOR HALIAN², GALINA LIALIUK³, ROMAN CHOPYK⁴,
YEVHEN KARPENKO⁵, YULIYA MELNYK⁶

¹Kherson State University, Kherson, UKRAINE

²Lviv Polytechnic National University, Lviv, UKRAINE

^{3,5}Lviv State University of Internal Affairs, Lviv, UKRAINE

⁴Drohobych Ivan Franko State Pedagogical University, Drohobych, UKRAINE

⁶Kremenets Regional Humanitarian and Pedagogical Academy named after Taras Shevchenko, Kremenets, UKRAINE

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Abstract:

The purpose is to establish the interdependence of self-actualization characteristics and to develop the factor structure of self-actualization mental states in young female handball players. **Methods.** Valid psychodiagnostic methods that have been validated in a number of sports studies were employed; targeted surveillance using standard protocol forms; factor analysis of lowering the proportionality of self-actualization elements using the ANOVA method; and Spearman correlation (r_s). **Results.** The study's methodological basis was the view of personality as an open, dynamic, self-organizing, and self-developing system. The psychological patterns of youth sports achievements are described. The parameters for young female handball players' self-actualization have been established. The self-actualizing mental states factor structure is built. F1 "Search for Self-Actualization" (25.943%), F2 "Self-Motivation" (21.948%), F3 "Temporal Incongruence" (14.737%), F4 "World Perception" (9.221%) and F5 "Attitude to Cognition" (4.453%) were identified as the five factors (76.312%). F1 and F2 were discovered to be the most consistently loaded with self-regulatory components. F1 and F2 have the strongest correlation ($p \leq .05$; $p \leq .01$). F3 "Temporal Incongruence" was identified as the most harmful dominating self-actualizing mental state. Total concentration on the future and the objective narrows the attention of young female handball players to the outcome while disregarding the quality of the process, which has a detrimental impact on overall performance. **Conclusions.** It is experimentally defined and proved that the study's findings should be implemented in the training and rehabilitation of young female handball players. Self-actualizing mental states that have been established and defined are a hidden resource of good sports performances in female handball players. The coaching staff's discovery of the prevalent self-actualizing mental states of female handball players provides a tactical advantage over the opponent. It should be emphasized that the combination of procedural component and outcome reveals the athlete's psychological development and leads to the attainment of consistently excellent performance.

Key words: mental state, psychological maturity, athlete self-regulation, self-motivation, psycho-emotional resource

Introduction

The plane of sports psychology is the epicenter of the success of big sports record achievements. Of course, the training process system, sports physiology, nutrition technology, and recovery in major sports are all vital components on the route to victory. However, they only allow the athlete to participate and perform at a specific level. Something more is required to win prizes, win consistently, and maintain peak fitness for an extended period of time. Psychological preparation is essential for athletes, coaches, and teams. Athletes are taught the mentality of a winner, how to outperform themselves, and how to overcome anxieties, flaws, and temptations (Alekseev, 2006). Our empirical research attempts to identify, in the field of sports psychology, motivation for success, taking psychological maturity into consideration, such scientific variables that will impact the self-actualization of young female handball players.

The last stage of development in the hierarchy of needs is self-actualization by A. Maslow (1970). The athletes achieve this level when they can use their skills while assuming all risks. According to A. Maslow (1970), obtaining self-actualization is extremely rare, with just 1.0 percent of persons reaching this level in adulthood. We assume that athletes may reach self-actualization early in their careers, successfully exhibiting their psycho-emotional and physical potential. Likewise, there are perspectives on self-actualization, defined as a person's openness to growth and health, as opposed to the concentration on ideals, perfection, success, or happiness (Maddi, 1994). Nonetheless, psychological maturity is vital since it directs the A. Maslow's (1970) attention.

Psychological maturity is an important component that should not be overlooked while discussing athlete self-actualization, especially for young individuals whose development is crucial. Psychological maturity is understood as personal, social, mental, emotional, and professional aspects of its manifestation. Athlete maturity is a specific stage in their professional growth, characterized by the capacity to produce great sports results. Self-development as a distinct type of development is the mechanism of maturity. According to E. Sergienko (2007), "... the category of maturity is shown as the ability to continuous self-development, change, and keep its individuality" (Sergienko, 2007: 16). Self-development, according to acmeological studies of maturity, is a specific manner of becoming a person as a personality and a professional, aimed at self-realization and contributing to attaining the peaks of personal and professional growth (Halian & Dub, 2013). Self-development is presented in educational paradigms as a change in emphasis from leadership in student development to their self-development. A graduate's personality is presented as an incomplete "product", as a person who continues to grow and is capable of managing this process autonomously, i.e. self-development. As a result, the purpose of education is to assist the individual as a subject of their own growth. That is, instead of self-development via the efforts of instructors, trainers, and psychologists, it is a matter of support and the creation of favorable conditions. We summarize that, because self-development is a psychological maturity process, self-actualization is one of the mechanisms of self-development. Athlete aspires to be the best version of themselves, to achieve the pinnacle of their abilities. This, according to A. Maslow (1970), is self-actualization. The scientist, who primarily studied self-actualization in adulthood and old age, emphasized the importance of studying self-actualization in young people who "experience the development process as much as possible" and have mental health, which is "development and movement toward self-actualization" (Maslow, 1997: 24). These considerations persuade us that we should explore scientific predictors of self-actualization in young female handball players during youth.

The criteria of junior athletes' self-actualization are explored, and the hierarchy of motives-categories that inspire them to participate in sports and promote full-fledged sports self-realization is explained (Tishchenko, 2013). Another research on the prevailing mental states of self-regulatory preparedness discovered that the created objective self-esteem and level of demands is a latent psycho-emotional resource that assures the attainment of a successful outcome (Popovych et al., 2022e). The study's authors discovered a variety of mental states of respondents connected to victory expectations (Popovych et al., 2019b; 2021e), self-regulatory processes (Popovych & Blynova, 2019a; 2019b; Popovych et al., 2019c; 2022a), the establishment of a safe educational space for respondents (Blynova et al., 2020b; Mamenko et al., 2022; Popovych et al., 2020a), adaption resources (Blynova et al., 2019; 2022) and documented scientific patterns of youth formation and development (Popovych et al., 2021g).

We define self-actualization as the athlete's maximum level of self-realization and self-development. The athlete's engagement in what transcends them is required for true manifestation in the sports activity. Many difficult concerns of human life are answered through the concept of self-actualization, such as freedom, choice, and responsibility, community and loneliness, loss, and the desire for meaning, which are worsened in times of rapid change and instability. The authors define self-actualizing mental states of young female handball players as states of sports activity that give self-development, self-motivation, and mental maturity and are targeted at reaching athlete self-actualization.

Hypotheses. The authors assume that: 1) the development of dominant self-actualizing mental states in young female handball players will uncover a hidden resource for effective sports performances; 2) dominant self-actualizing mental states are consistently loaded with self-regulatory components.

The purpose is to establish the interdependence of self-actualization characteristics and build the factor structure of self-actualization mental states in young female handball players.

Material and methods

Methodology. The principle of using a systematic method to study mental states (Lomov, 1996; Shadrikov, 1994); metasystemicity as a general principle of psychological organization, the presence of a system with a "built-in" metasystemic level, and its study from the perspective of structural-level invariance (Karpov, 2000); the principle of value-semantic self-regulation, which broadens the framework for comprehending personality axiogenesis, according to which self-regulation of value Self-changes offer an option – an internal action whose outcome is determined by subjective activity (Halian, 2016) became central to the research. The determinants of self-actualization are the individual's structural traits that are grouped on a hierarchical basis. The system of vertical and horizontal connections between the components allows the movement from specialized components to the fundamental components via the production of symptom complexes. As a result, separating the component structure of self-actualization in young female handball players will allow us to uncover the internal determinants of self-development on the path to psychological maturity.

Validated methods were used to provide a qualitative picture of the research on the prevalent self-actualizing mental states of young female handball players (Hudimova, 2021; Hudimova et al., 2021; Kobets et al., 2021a; 2021b), it is taken into consideration the methodology of investigation of individual expectations as a triune dimension: process, condition, and qualities (Popovych et al., 2019a; 2020c; 2021b), the general laws of training

structure and tactical preparation are explored (Korobeynikov et al., 2020; Popovych et al., 2021f; 2022d). The study focuses on the competitive dynamics of elite female handball players (Popovych et al., 2020b; 2021c; Strykalenko et al., 2020). The study of mental health and emotional stability in the context of young female athletes' psychological maturation is taken into account (Karpenko, 2020; Popovych et al., 2021a; 2022b; 2022c). The role of the human element in extreme situations (Nosov et al., 2020a; 2020b), risky and harsh human trials (Nosov et al., 2021a; 2021b; Zinchenko et al., 2020; 2021; 2022a; 2022b), has been investigated in experimental studies. All of the works analyzed are related to the subject of our research.

Participants. Respondents were chosen such that their age range corresponded to that of youth, i.e. 15 to 19 years. Regardless of the degree of qualifications and achievements of female handball players, the age factor prevailed. The study's participants were $n = 65$ female handball players from the women's handball clubs "Real" (Mykolaiv, Ukraine) and "Dnipryanka" (Kherson, Ukraine). Respondents are participants in the Championship of Ukraine (Super League) and the Championship of Ukraine (Junior League). The sample includes champions of the Ukraine Championship, all-Ukrainian, and foreign events.

Organization of research. An empirical section of psychodiagnostic procedures was conducted from September to November 2021. During this period, eight targeted observations were conducted, with data collected in standard forms. Primarily, it was the identification of dominating mental states and the verification of the study's probable operationalization in tactical training and rehabilitation of female handball players. Respondents' participation was entirely voluntary and confidential. Ethics committees and handball club administrations have given preliminary authorization to conduct the study.

Procedures and instruments. The method "Self-actualization test" ("SAT") in the adaptation of Yu. Aleshina, L. Gozman, M. Zagika, M. Kroz (1987) was used to measure the levels of self-actualization of the respondents' personality. This is an adapted version of E. Shostrom's (1964) "Personal Orientation Inventory" ("POI") test, which assesses self-actualization as a multidimensional variable. The diagnostic criterion was a scale-based measure of the individual's self-actualization. Fourteen different scales were used. A high or near-high score on a given scale indicates the individual's self-actualization. The obtained data's homogeneity α -Cronbach coefficient was $\alpha_{SAT} = .802$.

The test "Life-Meaningful Orientations" ("LMO") (Leontyev, 2006) was used for two dimensions: Locus of Control-Self (LCS) and Locus of Control-Life (LCL). These scales emphasize the respondent's attention to "Self" and "Life". It is worth noting that "Self" and "Life" are fundamental in the subjective dimension "past-present-future". In terms of substance, these measures define respondents' competency over time. The α -Cronbach parameter was set to $\alpha_{LMO} = .856$ (determined on all test scales).

The Motivation to Succeed (MS) scale from the same-named "Motivation to Succeed" (MS) (Elers, 2002) psychodiagnostic method was used. A direct measuring scale was used. The level of reliability of α -Cronbach was $\alpha_{MS} = .904$. The α -Cronbach reliability coefficients ranged from .802 (medium level) to .904 (high level).

Statistical analysis. Mathematical data were processed using the software "SPSS" v. 24.0. All empirical data are presented using a set of fundamental frequency characteristics. The frequency characteristics are compared to the methodologies' authors' stated average norms. The proportionality of self-actualization elements was reduced by using ANOVA factor analysis using the main components approach and Varimax rotation. Spearman's correlation coefficient (r_s) was used, and significant differences were observed at $p \leq .05$ and $p \leq .01$.

Results

According to the results of a study using the "SAT" method (Aleshina et al., 1984) young female handball players were diagnosed with various levels of self-actualization. According to E. Shostrom's "POI" (1964), test scores of respondents with a high level of self-actualization are within 60 T-points. The use of the "SAT" method in numerous research and psychotherapy work demonstrates that the "range of self-actualization" is near to the norms of "POI" (55-70 T-points), and this value is an indicator of the individual's true self-actualization. Individuals with low self-actualization have scale scores in the 40-45 T-point range or lower, which puts them at significant risk of depression, apathy, neurosis, psychosomatic disorders, and addictions. The test's range of scores of 45-55 T-points attests to the mental and statistical norm. The data on the Locus of Control-Self, Locus of Control-Life, and Motivation to Succeed scales were not substantially different and were consistent with the norms established by the authors (Elers, 2002; Leontyev, 2006) or reported in sports research (Popovych et al., 2021d). Table 1 presents descriptive statistics indicators for this criterion for the entire sample.

Table 1. Descriptive statistics of indicators according to the methods "SAT", "LMO" and "MS"

Scale	Max _t	Min _e	Max _e	T-points	X	Me	Mo	σ
"Self-actualization test"								
Competence in Time (Tc)	17.00	2.00	12.00	42	6.15	6	7	2.305
Support (I)	91.00	21.00	64.00	43	40.53	40	45	7.307
Value Orientations (SAV)	20.00	6.00	17.00	48	11.07	11	10	2.069
Behavioral Flexibility (Ex)	24.00	4.00	18.00	58	9.23	9	10	2.835

Self-Sensitivity (Fr)	13.00	2.00	11.00	47	6.19	6	5	2.108
Spontaneity (S)	14.00	2.00	11.00	46	6.07	6	7	2.069
Self-esteem (Sr)	15.00	3.00	14.00	35	7.53	8	8	2.726
Self-acceptance (Sa)	21.00	3.00	15.00	48	8.25	8	7	2.516
Concept of Human Nature (Nc)	10.00	3.00	9.00	55	5.91	6	6	1.340
Synergy (Sy)	7.00	2.00	7.00	52	4.26	4	4	1.110
Acceptance of Aggression (A)	16.00	3.00	14.00	48	7.37	7	8	2.334
Contact (C)	20.00	2.00	14.00	40	7.12	7	5	2.390
Cognitive Needs (Cog)	11.00	1.00	12.00	48	4.49	4	4	1.862
Creativity (Cr)	14.00	1.00	11.00	48	6.14	6	6	2.056
“Life-Meaningful Orientations”								
Locus of Control-Self (LCS)	0.0	7.00	30.00	43	21.15	22	21	22.492
Locus of Control-Life (LCL)	0.0	14.00	42.00	41	29.34	30	28	29.138

“Motivation to Succeed”

Motivation to Succeed (MS)	0.0	18.0	37.0	45	26.15	28	25	25.124
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Note: Max_t – maximum value theoretical; Min_e – minimum value empirical; Max_e – maximum value theoretical empirical; T-points – T-points; X – asymmetry; Me – median; Mo – mode; σ – arithmetic mean.

The basic scales of “Competence in time” and “Support”, as well as the extra scales of “Contact” and “Self-esteem”, were of concern based on the results reported in Table 1. The individuals’ vision of the future was limited by current events, which emphasized the present (scale “Competence in time”). A low “Support” indication reflected their reliance on external forces, increasing the display of external localization of control. All of this was due to the increase in value inconsistencies, the limiting of emotionally charged relationships (scale “Contact”), and the decline in self-importance (scale “Self-esteem”). The characteristics of respondents with varying levels of self-actualization differed. We presumed, without attempting to describe them, that as the level of self-actualization changed, so did the depth of interior experiences induced by value conflicts.

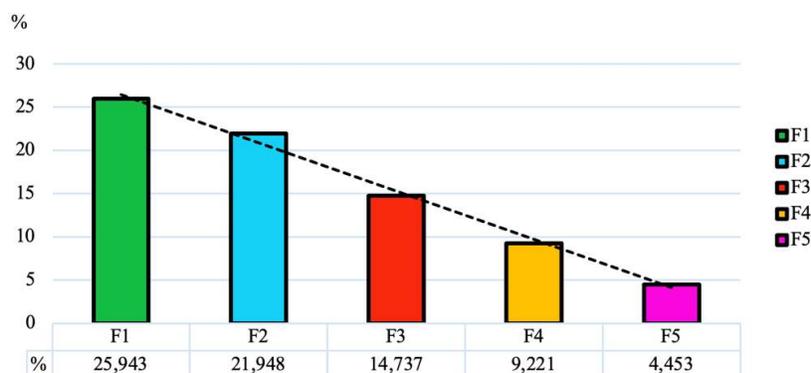
A factor analysis using the approach of major components with Varimax rotation was used to discover the inner core, which forms the inner position of young female handball players (Tabl. 2).

Table 2. Inverse matrix of components of factor analysis of self-actualization parameters

Variables	Component				
	F1	F2	F3	F4	F5
	Search for Self-Actualization	Self-motivation	Temporal Incongruence	World Perception	Attitude to Cognition
Fr	.850	.350	.103	-.069	-.012
I	.753	.253	.549	.100	-.002
C	.711	.111	.317	-.155	.061
S	.701	.201	.028	.040	-.059
SAV	.614	.414	.156	.593	.153
Cr	.569	.369	-.048	.145	.454
A	.490	.190	.441	.146	-.223
Sr	.477	.177	.437	.268	.125
Sa	.155	.827	.057	.036	-.049
Tc	.000	.021	.825	-.014	-.037
Ex	.385	.185	.765	.020	.082
Nc	-.048	-.089	-.162	.767	-.098
Sy	-.009	-.056	.438	.689	.202
Cog	-.039	-.121	-.012	.013	.906
LCS	.250	.810	.337	.437	.137
LCL	-.110	-.050	-.350	.437	.237
MS	.450	.895	.437	.037	-.117
Dispersion, %	25.943	21.948	14.737	9.221	4.453
Σ dispersion, %	25.943	47.948	62.638	71.859	76.312
Value	3.632	3.132	1.743	1.371	1.083

Note: Fr – Self-Sensitivity; I – Support; C – Contact; S – Spontaneity; SAV – Value orientations; Cr – Creativity; A – Acceptance of Aggression; Sr – Self-esteem; Sa – Self-Acceptance; Tc – Competence in Time; Ex – Behavioral Flexibility; Nc – Concept of Human Nature; Sy – Synergy; Cog – Cognitive Needs; LCS – Locus of Control-Self; LCL – Locus of Control-Life; MS – Motivation to Succeed; Factors selection method: principal components method; rotation method: varimax with Kaiser normalization.

We state that the collected five factors (F1–F5) comprised the factor structure of self-actualizing mental states of young female handball players with a variance of $\Sigma = 76.312\%$ (Fig. I).



Note: ----- – trend line; F1 – Search for Self-Actualization; F2 – Self-Motivation; F3 – Temporal Incongruence; F4 – World Perception; F5 – Attitude to Cognition.

Figure I. The factor structure of young female handball players' self-actualizing mental states

Table 3 shows a correlation matrix of the interdependence of young female handball players' dominant self-actualizing mental states.

Table 3. Correlation matrix of interdependence of dominant factors of respondents (n=65)

Factors	F1	F2	F3	F4	F5
Search for Self-Actualization	1.000	.298**	-.098*	.045	.081*
Self-Motivation	.298**	1.000	.089*	.082*	.092*
Temporal Incongruence	-.098*	.089*	1.000	.022	.011
World Perception	.045	.082*	.022	1.000	.182**
Attitude to Cognition	.081*	.092*	.011	.182**	1.000

Note: F1 – Search for Self-Actualization; F2 – Self-Motivation; F3 – Temporal Incongruence; F4 – World Perception; F5 – Attitude to Cognition; ** – $p \leq .01$; * – $p \leq .05$.

We state that the strongest correlations ($p \leq .01$) were F1 and F2 ($r_s = .298$), F4 and F5 ($r_s = .321$). The most significant connections were counted as four in F2. F2 has been determined to be the most reliant factor since it had positive correlations with all others. This is explained by the fact that while the self-actualizing mental state of “Self-Motivation” was important, we should not overlook the condition of “Search for Self-actualization”. F3 “Temporal Incongruence” was discovered to be the least reliant, with one positive correlation with F5 (.081; $p \leq .05$), and one negative correlation with F1 (-.098; $p \leq .05$). We claim that F3 “Temporal Incongruence” was the least reliant self-actualizing mental state and so posed a relative danger. We explain this by the fact that the whole concentration on the future and the objective of the activity concentrated the attention of young female handball players solely on the result while disregarding the quality of the process. The ongoing “race for the result” led respondents to lose interest in the process, disregard the quality of exercises and assignments, and avoid engaging in quality tactical work. This complex, even with maximum self-motivation and willingness to succeed, in the long run, may negatively affect the overall winning result of the team. This is a danger to the player's and the team's prevailing self-actualizing mental state. We conclude that F1 “Search for Self-actualization” and F2 “Self-Motivation” were the most relevant factors in the factor structure of young female handball players' self-actualization mental states.

Discussions

Given the purpose of our empirical study, S. Maddi's (1994) perspective on the subject of self-development and self-actualization is interesting. The researcher proposes to analyze three essential paradigms of personology: the comparative analysis paradigm, the “nuclear personality” paradigm, and the “peripheral personality” paradigm. The scientist proposes three integral models of personality in them: the conflict model, the self-realization model, and the coherence model. A synthesis of concepts regarding personal universal and stable qualities is carried out within the nuclear personality paradigm. We are essentially discussing the individual's nuclear qualities, which include profound potentials, instincts, and intrinsic desires, an innate desire for self-realization and self-actualization, and a proclivity for internal coherence and harmony (Erikson, 1996; Freud & Breyer, 2005; Maslow, 1970). The peripheral personality paradigm integrates notions concerning stable personal phenomena as well as those that are directly tied to human behavior and are the product of learning. Achievement motivation, lifestyle, character types or “syndromes” (Freud & Breyer, 2005; Maslow, 1970), and others are examples. According to S. Maddi (1994), the nucleus and periphery are linked through development (McWilliams, 2010). As a result, it is reasonable to suppose that the scientist regards the desire for self-

realization and self-actualization as developable. The findings of our study of young female handball players are supported by the mentioned paradigms. The crucial point is that the established dominating mental states should not be seen as stable; they are in organic unity with all mental processes, feelings, and personality attributes of the athlete and are always evolving.

The results of the "SAT" method (Aleshina et al., 1984) revealed that people with a high degree of self-actualization, as opposed to those with low levels, are more orientated in time and live more in the present, viewing it in oneness with the past and future. It should be mentioned that such people have a high level of self-actualization, are less susceptible to external influences, are more concentrated, and are directed by the ideals inherent in the self-actualized personality.

Furthermore, respondents with varying levels of self-actualization exhibit qualitative and quantitative differences in the system of their value orientations' inherent inconsistencies. The depth of the experienced value conflicts fluctuates when the level of self-actualization changes. That is the greater one's level of self-actualization, the shallower one's perception of value inconsistencies. This conclusion encouraged us to look for the inner nucleus that allows young female athletes to achieve self-actualization. The factor analysis using the approach of the returning components was employed for this purpose.

F1 has been determined to be fundamental to scales such as "Self-Sensitivity" and "Support". The first assesses how well a person knows and reflects on their own wants and feelings. The second metric assesses the degree of subjectivity in values and conduct. The dominance of "internal" or "external" behavioral determinism shows insight and awareness of their own wishes and the desire for independence of value choices. However, considering the average test score on this scale (see Table 2), a considerable reliance on external judgments was conceivable. This component, which accounted for 25.943 % of the variation, was known as "Search for Self-Actualization"

"Self-motivation" is the name given to F2, which explained 21.948 % of the dispersion sieving. It consisted of the primary scale "Motivation to Succeed" and two auxiliary scales: "Self-acceptance" and "Locus of Control-Self". A high empirical score on the base scale $MS = 26.15$ reflected the direction of the success motive. Because of the high rates linked with "Self", the major focus was on the perception of sports successes and the formation of possibilities for self-growth, which were centered on the subject's own resources of motivation.

F3, which accounted for 14.737 % of the dispersion sieving, is known as "Temporal Incongruence". It was composed of the fundamental scale "Orientation in time" and two auxiliary scales: "Support" and "Behavioral Flexibility". A low empirical score on the base scale $Tc = 6.15$ suggested a one-sided temporal orientation, mostly toward the future. As a result, the opportunity of gaining a full understanding of one's way of life in order to create ideal opportunities for self-development was lost. This was assisted by the limited capacity to view oneself as a female athlete in reality. Not very flexible conduct (as measured by the scale "Behavioral Flexibility") did not contribute to the achievement of their values and slow response to changing variability.

F4 "World Perception" formed two scales with high correlations to the factor: "Concept of Human Nature" (.767) and "Synergy" (.689). This factor explained 9.221 % of dispersion sieving. Both scales helped to define the concept of a person. Our respondents sought a comprehensive view of the world, without categorizing it according to certain criteria.

There was a scale "Cognitive needs" with a correlation of .906 in F5 - "Attitude to cognition", which explained 4.453 %. The comparatively low average level on this scale, $Cog = 4.49$, did not suggest a strong willingness to learn about the environment. This scale, along with the Creativity scale (.454), was not, however, directly associated with self-actualization. They were added by the method's creator, E. Shostrom (1964), based on the findings of an expert survey as well as some general theoretical concerns. However, these scales suggest the individual's level of creative orientation as one of the theoretically crucial parts of the phenomenon of self-actualization.

Based on the study's findings (see Tab. 2 and Tab. 3), we conclude that the first hypothesis was confirmed, since the latent resource of young female handball players' excellent sports performances was in the establishment, support, and domination of F1 and F2. The second hypothesis was likewise confirmed since the dominating self-actualizing mental states were consistently associated with the following self-regulatory components: "Self-Sensitivity" ($Fr = .850$); "Self-Acceptance" ($Sa = .827$), and "Locus of Control-Self" ($LCS = .810$). Identification of the dominating self-actualizing mental states of female handball players by the coaching staff provides a tactical edge over the opponent.

Conclusions

1. The self-actualizing mental states of young female handball players are sports activity states that give self-development, self-motivation, and mental maturity and are aimed at reaching the athlete's self-actualization.

2. The factor structure of self-actualizing mental states is constructed. Five factors were stated (73.12%): F1 "Search for Self-Actualization" (25.943%), F2 "Self-Motivation" (21.948%), F3 "Temporal Incongruence" (14.737%), F4 "World Perception" (9.221%) and F5 "Attitude to Cognition" (4.453%).

3. The correlations F1 and F2 ($r_s = .298$), F4 and F5 ($r_s = .321$) were stated to be the strongest ($p \leq .01$). Four significant connections were discovered in F2. F2 has been discovered to be the most reliant factor since it had

positive correlations with all others. F1 and F2 were discovered to be the most consistently loaded with self-regulatory components: “Self-Sensitivity” ($r=.850$); “Self-Acceptance” ($r=.827$); “Locus of Control-Self” ($r=.810$).

4. F3 “Temporal Incongruence” is said to be the most dangerous dominating self-actualizing mental state. The whole orientation of young female handball players towards the future and the goal concentrates their attention solely on the result, with a disregard for the quality of the process, which may have a detrimental impact on overall performance in the long term.

5. Hypotheses confirmed, purpose achieved. It is experimentally defined and proved that the study’s findings should be implemented in the training and rehabilitation of young female handball players. Self-actualizing mental states that have been established and defined are a hidden resource of good sports performances in female handball players. The coaching staff’s discovery of the prevalent self-actualizing mental states of female handball players provides a tactical advantage over the opponent. It should be emphasized that the combination of procedural component and outcome reveals the athlete’s psychological development and leads to the attainment of consistently excellent performance. Perspective may be shown in the comparison of self-actualizing mental states of representatives from various sports, both team and individual.

References:

- Alekseev, A. V. (2006). *Get over yourself! Mental preparation in sports*. Rostov on Don: Phoenix.
- Aleshina, Yu. E., Gozman, L. Ya., Zagika, M. V., & Kroz, M. V. (1987). *Self-actualization test*. Moscow: MSU.
- Blynova, O., Derevianko, S., Ivanova, O., Popovych, I., & Estay Sepulveda, J. G. (2022). Professional relevance of potential labor emigrants. *Revista Notas Históricas y Geográficas*, 29, 88-106.
- Blynova, O., Kruglov, K., Semenov, O., Los, O., & Popovych, I. (2020b). Psychological safety of the learning environment in sports school as a factor of achievement motivation development in young athletes. *Journal of Physical Education and Sport*, 20(1), 14-23. <https://doi.org/10.7752/jpes.2020.01002>
- Blynova, O. Ye., Popovych, I. S., Bokshan, H. I., Tsilmak, O. M., & Zavatska, N. Ye. (2019). Social and Psychological Factors of Migration Readiness of Ukrainian Students. *Revista ESPACIOS*, 40(36), 4.
- Elers, T. (2002). *Motivation for Achieving Success and Avoiding Failures*. St. Petersburg: Piter.
- Erikson, E. (1996). *Youth and crisis*. Moscow: Progress.
- Freud, S., & Breuer, J. (2005). *A research of hysteria*. Sankt-Peterburg: VEIP.
- Halian, I. M., & Dub, V. G. (2013). Psychological Features of Self-Actualization of Future Teachers in the Process of Educational and Professional Activity. *Scientific Bulletin of LSU IA*, 2, 88-97.
- Halian, I. M. (2016). *Value-Semantic Self-Regulation of Personality: Genesis and Mechanisms of Functioning*. Drohobych: Ivan Franko State Pedagogical University.
- Hudimova, A., Popovych, I., Savchuk, O., Liashko, V., Pyslar, A., & Hrys, A. (2021). Research on the relationship between excessive use of social media and young athletes’ physical activity. *Journal of Physical Education and Sport*, 21(6), 3364-3373. DOI: 10.7752/jpes.2021.06456
- Hudimova, A. Kh. (2021). Psychological well-being and social media users’ behavioral online patterns in everyday life and during COVID-19 pandemic. *Insight: the psychological dimensions of society*, 5, 133-147. <https://doi.org/10.32999/2663-970X/2021-5-9>
- Karpenko, Ye. (2020). *Emotional intelligence in the discourse of personal life*. Drohobych: Posvit.
- Karpov, A. V. (2000). *General Psychology of Subjective Choice*. Moscow: Institute of Psychology RAS.
- Kobets, V., Liubchenko, V., Popovych, I., & Koval, S. (2021a). Institutional Aspects of Integrated Quality Assurance of Engineering Study Programs at HEI Using ICT. In: Ivanov V., Trojanowska J., Pavlenko I., Zajac J., Peraković D. (eds). *Advances in Design, Simulation and Manufacturing IV. DSMIE 2021. Lecture Notes in Mechanical Engineering*. Springer, Cham. https://doi.org/10.1007/978-3-030-77719-7_30
- Kobets, V., Liubchenko, V., Popovych, I., & Koval, S. (2021b). Institutional Aspects of Integrated Quality Assurance of Study Programs at HEI Using ICT. *CEUR Workshop Proceedings*, 2833, 83-92.
- Korobeynikov, G., Korobeynikova, L., Bulatova, M., Mishko, V., Cretu, M. F., Yarmak, O., Khmelnytska, I., & Kudria, M. (2020). Relationship of successful formation of choreographic skills in young athletes with psychophysiological characteristics. *Journal of Physical Education and Sport*, 20(2), 915-920. DOI:10.7752/jpes.2020.02130
- Leontyev, D. (2006). *Test of life-meaningful orientations (“LMO”)*. Psychodiagnostic series. Moscow: Smysl.
- Lomov, B. F. (1996). *Systematics In Psychology*. Voronezh: NPO MODEK.
- Maddi, S. R. (1994). Hardiness and Mental Health. *Journal of Personality Assessment*, 63(2), 265-274.
- Mamenko, P., Zinchenko, S., Kobets, V., Nosov, P., & Popovych I. (2022). Solution of the Problem of Optimizing Route with Using the Risk Criterion. In: Babichev, S., Lytvynenko, V. (eds). *Lecture Notes in Computational Intelligence and Decision Making. ISDMCI 2021. Lecture Notes on Data Engineering and Communications Technologies*, 77. Springer, Cham. https://doi.org/10.1007/978-3-030-82014-5_17
- Maslow, A. (1970). *Maslow A. Motivation and Personality*. New York: Harper and Row.
- McWilliams, N. (2010). *Psychoanalytic Diagnosis: Understanding the Personality Structure In The Clinical Process*. Moscow: Class.

- Nosov, P., Ben, A., Zinchenko, S., Popovych, I., Mateichuk, V., & Nosova, H. (2020a). Formal approaches to identify cadet fatigue factors by means of marine navigation simulators. *CEUR Workshop Proceedings*, 2732, 823-838.
- Nosov, P., Zinchenko, S., Ben, A., Prokopchuk, Y., Mamenko, P., Popovych, I., Moiseienko, V., & Kruglyj, D. (2021a). Navigation safety control system development through navigator action prediction by Data mining means. *Eastern-European Journal of Enterprise Technologies*, 2(9(110)), 55–68. DOI: 10.15587/1729-4061.2021.229237
- Nosov, P., Zinchenko, S., Plokhikh, V., Popovych, I., Prokopchuk, Y., Makarchuk, D., Mamenko, P., Moiseienko, V., & Ben, A. (2021b). Development and experimental study of analyzer to enhance maritime safety. *Eastern-European Journal of Enterprise Technologies*, 4(3(112)), 27–35. DOI: <https://doi.org/10.15587/1729-4061.2021.239093>
- Nosov, P., Zinchenko, S., Popovych, I., Safonov, M., Palamarchuk, I., & Blakh, V. (2020b). Decision support during the vessel control at the time of negative manifestation of human factor. *CEUR Workshop Proceedings*, 2608, 12-26.
- Popovych, I., Blynova, O., Aleksieieva, M., Nosov, P., Zavatska, N., & Smyrnova, O. (2019a). Research of Relationship between the Social Expectations and Professional Training of Lyceum Students studying in the Field of Shipbuilding. *Revista ESPACIOS*, 40(33), 21.
- Popovych, I. S., Blynova, O. Ye., Bokshan, H. I., Nosov, P. S., Kovalchuk, Z. Ya., Piletska, L. S., & Berbentsev, V. I. (2019b). The Research of the Mental States of Expecting a Victory in Men Mini-football Teams. *Journal of Physical Education and Sport*, 19(4), 2343-2351. <https://doi.org/10.7752/jpes.2019.04355>
- Popovych, I., Blynova, O., Kuzikova, S., Shcherbak, T., Lappo, V., & Bilous, R. (2021a). Empirical research of vitality of representatives of parachuting and yoga practice: a comparative analysis. *Journal of Physical Education and Sport*, 21(1), 218-226. <https://doi.org/10.7752/jpes.2021.01029>
- Popovych, I., Blynova, O., Nass Álvarez, J. L., Nosov, P., & Zinchenko, S. (2021b). A historical dimension of the research on social expectations of an individual. *Revista Notas Históricas y Geográficas*, 27, 190-217.
- Popovych, I., Blynova, O., Nosov, P., Zinchenko, S., & Kononenko, O. (2021c). Psychological factors of competitiveness of the women's youth handball team. *Journal of Physical Education and Sport*, 21(1), 227-235. <https://doi.org/10.7752/jpes.2021.01030>
- Popovych, I., Blynova, O., Savchuk O., & Halian, I. (2020a). Self-efficacy of future athletes with different levels of psychological safety. *Journal of Physical Education and Sport*, 20(5), 2718-2724. <https://doi.org/10.7752/jpes.2020.05370>
- Popovych, I., Blynova, O., Savchuk, O., Zasenka, V., & Prokhorenko, L. (2020b). Expectations of a winning result in women's handball team: comparison of different age groups. *Journal of Physical Education and Sport*, 20(5), 2709-2717. <https://doi.org/10.7752/jpes.2020.05369>
- Popovych, I., Borysiuk, A., Semenov, O., Semenova, N., Serbin, I., & Reznikova, O. (2022a). Comparative analysis of the mental state of athletes for risk-taking in team sports. *Journal of Physical Education and Sport*, 22(4), 848-857. DOI: 10.7752/jpes.2022.04107
- Popovych, I., Halian, I., Halian, O., Nosov, P., Zinchenko, S., & Panok, V. (2021d). Research on personality determinants of athlete's mental exhaustion during the ongoing COVID-19 pandemic. *Journal of Physical Education and Sport*, 21(4), 1769-1780. <https://doi.org/10.7752/jpes.2021.04224>
- Popovych, I., Halian, I., Pavliuk, M., Kononenko, A., Hrys, A., & Tkachuk, T. (2022b). Emotional quotient in the structure of mental burnout of athletes. *Journal of Physical Education and Sport*, 22(2), 337-345. DOI: 10.7752/jpes.2022.02043
- Popovych, I., Hoi, N., Koval, I., Vorobel, M., Semenov, O., Semenova, N., & Hrys, A. (2022c). Strengthening of student youth's mental health using play sports. *Journal of Physical Education and Sport*, 22(6), 1384-1395. DOI: 10.7752/jpes.2022.06174
- Popovych, I., Kurova, A., Koval, I., Kazibekova, V., Maksymov, M., & Huzar, V. (2022d). Interdependence of emotionality, anxiety, aggressiveness and subjective control in handball referees before the beginning of a game: a comparative analysis. *Journal of Physical Education and Sport*, 22(3), 680-689. DOI: 10.7752/jpes.2022.03085
- Popovych, I., Pavliuk, M., Hrys, A., Sydorenko, O., Fedorenko, A., & Khanetska, T. (2021e). Pre-game expected mental states in men's mini-football teams: a comparative analysis. *Journal of Physical Education and Sport*, 21(2), 772-782. <https://doi.org/10.7752/jpes.2021.02096>
- Popovych, I. S., & Blynova, O. Ye. (2019a). Research on the Correlation between Psychological Content Parameters of Social Expectations and the Indexes of Study Progress of Future Physical Education Teachers. *Journal of Physical Education and Sport*, 19(SI 3), 847-853. <https://doi.org/10.7752/jpes.2019.s3122>
- Popovych, I. S., & Blynova, O. Ye. (2019b). The Structure, Variables and Interdependence of the Factors of Mental States of Expectations in Students' Academic and Professional Activities. *The New Educational Review*, 55(1), 293-306. <https://doi.org/10.15804/tner.2019.55.1.24>

- Popovych, I., Shcherbak, T., Kuzikova, S., Blynova, O., Nosov, P., & Zinchenko, S. (2021f). Operationalization of tactical thinking of football players by main game roles. *Journal of Physical Education and Sport*, 21(5), 334, 2480–2491. <https://doi.org/10.7752/jpes.2021.05334>
- Popovych, I., Shevchenko, A., Galvez, L. M., Klenina, K. (2021g). Research of the relationship between social desirability and value orientations of adolescents. *Revista Notas Históricas y Geográficas*, 26, 241-268.
- Popovych, I., Semenov, O., Hrys, A., Aleksieieva, M., Pavliuk, M., & Semenova, N. (2022e). Research on mental states of weightlifters' self-regulation readiness for competitions. *Journal of Physical Education and Sport*, 22(5), 1134-1144. DOI: 10.7752/jpes.2022.05143
- Popovych, I. S., Zavatskyi, V. Yu., Geyko, Ie. V., Halian, O. I., Zavatskyi, Yu. A., & Radul, I. H. (2019c). Research on the Structure, Variables and Interdependence of the Factors of Tourists' Mental States of Expectation for Leisure in Ukraine. *Revista ESPACIOS*, 40(37), page 22.
- Popovych, I., Zavatskyi, V., Tsiuniak, O., Nosov, P., Zinchenko, S., Mateichuk, V., Zavatskyi, Yu., & Blynova, O. (2020c). Research on the Types of Pre-game Expectations in the Athletes of Sports Games. *Journal of Physical Education and Sport*, 20(1), 43-52. <https://doi.org/10.7752/jpes.2020.01006>
- Sergienko, E. A. (2007). Maturity: A Molar or Modular Approach? *Phenomenon and Category of Maturity in Psychology*, 20, 13-28.
- Shadrikov, V. D. (1994). *Activity And Abilities*. Moscow: Logos.
- Shostrom, E. (1964). An inventory for the measurement of self-actualization. *Educational and psychological measurement*, 24(2), 207-218.
- Strykalenko, Y., Shalar, O., Huzar, V., Voloshynov, S., Yuskiv, S., Silvestrova, H., & Holenko, N. (2020). The correlation between intelligence and competitive activities of elite female handball players. *Journal of Physical Education and Sport*, 20(1), 63-70. <http://dx.doi.org/10.7752/jpes.2020.01008>
- Tishchenko, V. O. (2013). Motivation of self-realization in sports. *Science and Education*, 4, 214-217.
- Zinchenko, S., Moiseienko, V., Tovstokoryi, O., Nosov, P., & Popovych, I. (2021). Automatic Beam Aiming of the Laser Optical Reference System at the Center of Reflector to Improve the Accuracy and Reliability of Dynamic Positioning. In: Hu, Z., Petoukhov, S., Dychka, I., He, M. (eds). *Advances in Computer Science for Engineering and Education IV. ICCSEEA 2021. Lecture Notes on Data Engineering and Communications Technologies*, 83. Springer, Cham. https://doi.org/10.1007/978-3-030-80472-5_1
- Zinchenko S., Tovstokoryi O., Ben A., Nosov P., Popovych I., & Nahrybelnyi Y. (2022a). Automatic Optimal Control of a Vessel with Redundant Structure of Executive Devices. In: Babichev S., Lytvynenko V. (eds). *Lecture Notes in Computational Intelligence and Decision Making. ISDMCI 2021. Lecture Notes on Data Engineering and Communications Technologies*, 77. Springer, Cham.
- Zinchenko, S., Tovstokoryi, O., Nosov, P., et al. (2020). Mathematical Support of the Vessel Information and Risk Control Systems. *CEUR Workshop Proceedings*, 2805, 335-354.
- Zinchenko, S., Tovstokoryi, O., Nosov, P., Popovych, I., & Kyrychenko, K. (2022b). Pivot Point position determination and its use for manoeuvring a vessel. *Ships and Offshore Structures*, DOI: 10.1080/17445302.2022.2052480