

VOLUME LXXVI, ISSUE 6, JUNE 2023

ISSN 0043-5147

E-ISSN 2719-342X

Wiadomości Lekarskie Medical Advances



Official journal of Polish Medical Association has been published since 1928



INDEXED IN PUBMED/MEDLINE, SCOPUS, EMBASE, EBSCO, INDEX COPERNICUS,
POLISH MINISTRY OF EDUCATION AND SCIENCE, POLISH MEDICAL BIBLIOGRAPHY

VOLUME LXXVI, ISSUE 6, JUNE 2023

ISSN 0043-5147

E-ISSN 2719-342X

Wiadomości Lekarskie Medical Advances



Official journal of Polish Medical Association has been published since 1928



ALUNA Publishing House



Memory of
dr Władysław
Biegański

Wiadomości Lekarskie is abstracted and indexed in: PUBMED/MEDLINE, SCOPUS, EMBASE, INDEX COPERNICUS,
POLISH MINISTRY OF EDUCATION AND SCIENCE, POLISH MEDICAL BIBLIOGRAPHY

Copyright: © ALUNA Publishing House.

Articles published on-line and available in open access are published under Creative Commons Attribution-Non Commercial-No Derivatives 4.0 International (CC BY-NC-ND 4.0) allowing to download articles and share them with others as long as they credit the authors and the publisher, but without permission to change them in any way or use them commercially.

The journal *Wiadomości Lekarskie* is cofinanced under Contract No.RCN/SN/0714/2021/1
by the funds of the Minister of Education and Science



Wiadomości Lekarskie Medical Advances

Editor in-Chief:

Prof. Władysław Pierzchała

Deputy Editor in-Chief:

Prof. Aleksander Sieroń

Statistical Editor:

Dr Lesia Rudenko

Managing Editor:

Agnieszka Rosa – amarosa@wp.pl

International Editorial Office:

Nina Radchenko (editor) – n.radchenko@wydawnictwo-aluna.pl

Polish Medical Association (Polskie Towarzystwo Lekarskie):

Prof. Waldemar Kostewicz – President PTL

Prof. Jerzy Woy-Wojciechowski – Honorary President PTL

International Editorial Board – in-Chief:

Marek Rudnicki Chicago, USA

International Editorial Board – Members:

Kris Bankiewicz	San Francisco, USA	George Krol	New York, USA
Christopher Bara	Hannover, Germany	Krzysztof Łabuzek	Katowice, Poland
Krzysztof Bielecki	Warsaw, Poland	Jerzy Robert Ładny	Białystok, Poland
Zana Bumbuliene	Vilnius, Lithuania	Henryk Majchrzak	Katowice, Poland
Ryszarda Chazan	Warsaw, Poland	Ewa Małecka-Tendera	Katowice, Poland
Stanislav Czudek	Ostrava, Czech Republic	Stella Nowicki	Memphis, USA
Jacek Dubiel	Cracow, Poland	Alfred Patyk	Göttingen, Germany
Zbigniew Gasior	Katowice, Poland	Palmira Petrova	Yakutsk, Russia
Mowafaq Muhammad Ghareeb	Baghdad, Iraq	Krystyna Pierzchała	Katowice, Poland
Andrzej Gładysz	Wrocław, Poland	Waldemar Priebe	Houston, USA
Nataliya Gutorova	Kharkiv, Ukraine	Maria Siemionow	Chicago, USA
Marek Hartleb	Katowice, Poland	Vladyslav Smiiianov	Sumy, Ukraine
Roman Jaeschke	Hamilton, Canada	Tomasz Szczepański	Katowice, Poland
Andrzej Jakubowiak	Chicago, USA	Andrzej Witek	Katowice, Poland
Peter Konturek	Saalfeld, Germany	Zbigniew Wszolek	Jacksonville, USA
Jerzy Korewicki	Warsaw, Poland	Vyacheslav Zhdan	Poltava, Ukraine
Jan Kotarski	Lublin, Poland	Jan Zejda	Katowice, Poland

Distribution and Subscriptions:

Bartosz Guterman prenumerata@wydawnictwo-aluna.pl

Graphic design / production:

Grzegorz Sztank www.red-studio.eu

Publisher:

ALUNA Publishing House
ul. Przesmyckiego 29,
05-510 Konstancin – Jeziorna
www.wydawnictwo-aluna.pl
www.wiadomoscilekarskie.pl
www.wiadlek.pl

CONTENTS

ORIGINAL ARTICLES

- Aidyn G. Salmanov, Volodymyr Artyomenko, Olena M. Susidko, Svitlana M. Korniyenko, Orusia A. Kovalyshyn, Oleksandr A. Voloshyn, Oleg V. Golyanovskiy
 CATHETER-ASSOCIATED URINARY TRACT INFECTIONS AFTER CAESAREAN SECTION IN UKRAINE: RESULTS A MULTICENTER STUDY (2020-2022) 1325
- Evangelos C. Fradelos, Maria Saridi, Vissarion Bakalis, Aikaterini Toska, Viktor Vus, Arndt Büssing, Kyriakos Souliotis
 MENTAL HEALTH, QUALITY OF LIFE, SPIRITUAL DRYNESS AND ACEDIA SYMPTOMS IN PATIENTS SUFFERING FROM CHRONIC DISEASES 1332
- Muhamad Arifin Parenrengi, Wihasto Suryaningtyas, Rifqi Aulia Destiansyah
 HYPERGLYCEMIA AS A PREDICTOR OF OUTCOME IN PAEDIATRIC SEVERE TRAUMATIC BRAIN INJURY PATIENTS UNDERWENT SURGERY: A SINGLE CENTER EXPERIENCE FROM EASTERN INDONESIA FROM 2017-2022 1342
- Olga Bilyayeva, Ivan Karol, Eugeniy Demianenko, Alina Gaidai, Yevhenii Kryzhevskiy, Polina Vakuliuk, Alexander Golub
 ORNIDAZOL-BASED APPLICATION SORBENT WITH NANO SILICA AND ITS ANTIMICROBIAL ACTIVITY 1347
- Sofia S. Bauman, Olga V. Sheshukova, Valentyna P. Trufanova, Iryna O. Kuz, Tetiana V. Polishchuk, Anna S. Mosienko, Kateryna S. Kazakova
 CYTOLOGIC CHARACTERISTIC OF THE CELLULAR COMPOSITION OF THE GUM MUCOUS MEMBRANE IN SCHOOL-AGE CHILDREN 1359
- Hayder Ch. Assad, Fadhil A. Rizij, Ayad A. Hussien, Zainab Hadi
 ACCEPTANCE OF THE COVID-19 VACCINE AND ITS RELATED FACTORS AMONG IRAQI ADOLESCENTS: A CROSS-SECTIONAL STUDY 1363
- Vlasta Vysochanska, Galina Koval
 MALASSEZIA COLONIZATION CORRELATES WITH THE SEVERITY OF SEBORRHEIC DERMATITIS 1371
- Sidrah Parvez, Ghizal Fatima, Farzana Mahdi, Najah R. Hadi, Jan Fedacko
 ASSESSMENT OF THE ASSOCIATION OF SEROTONIN TRANSPORTER GENE (5-HTTVNTR & 5-HTTLPR) POLYMORPHISM IN PATIENTS WITH FIBROMYALGIA SYNDROME 1378
- Taras V. Romaniv, Nadiya V. Skrypnyk, Ulyana V. Synko, Nataliia M. Voronych-Semchenko, Oleh V. Melnyk, Anna O. Hryb, Igor B. Boruchok
 THE ASSESSMENT OF COMPENSATION OF CARBOHYDRATE METABOLISM IN PATIENTS WITH TYPE 2 DIABETES MELLITUS WITH METABOLIC SYNDROME BEYOND THE LIMITS OF GLYCATED HEMOGLOBIN 1385
- Sergiy Stadnik, Olena Radchenko, Orest Komarytsia, Iryna Zhakun, Angelica Filipyuk, Nataliya Bek
 PECULIARITIES OF STRUCTURAL CHANGES IN THE BRAIN SUBSTANCE IN PATIENTS WITH ARRHYTHMIAS DEPENDING ON THE SEVERITY OF COGNITIVE DISORDERS 1391
- Grygoriy P. Griban, Olha S. Zablotska, Halyna A. Kolomoiets, Natalia A. Lyakhova, Iryna M. Nikolaieva, Iryna I. Shpak, Olena V. Lobova
 FAMILY INFLUENCE ON THE FORMATION OF CHILDREN'S MOTIVATION FOR A HEALTHY LIFESTYLE 1400

- Viktoriia Rudnyk, Nataliia Chaplynska, Liubov Skrypnyk
BRONCHIECTASIS IN ADULT PATIENTS: CLINICAL PECULIARITIES AND APPROACHES TO THE TREATMENT 1406
- Tetiana Miyer, Anna Klim-Klimaszewska, Svitlana Palamar, Olga Kotenko, Hennadii Bondarenko, Liudmyla Nezhyva, Yurii Savchenko
CAUSES OF ANXIETY DURING PLAY AS A FACTOR OF NEGATIVE IMPACT ON THE HEALTH OF PRESCHOOL AND SCHOOL CHILDREN 1413
- Iryna Yu. Karpiuk, Tetiana K. Obeziuk, Maryna O. Demydenko, Iryna Yu. Zakharova, Olena V. Pidvalna, Oleksandr Ye. Salamakha, Iryna A. Holovanova
IMPACT OF MOTOR ACTIVITY ON THE DYNAMICS OF INTELLECTUAL WORKING CAPACITY AND MENTAL COGNITIVE PROCESSES IN STUDENTS 1422
- Ivan M. Okhrimenko, Vadym V. Barko, Lesia V. Vavryk, Vadym D. Chornous, Svitlana S. Okhrimenko, Yurii V. Aleksandrov, Larysa M. Onishchuk
THE IMPACT OF PROFESSIONAL STRESS ON THE MENTAL HEALTH OF LAW ENFORCEMENT OFFICERS 1428
- Oleksandr O. Sabirov, Zoia V. Syrovatko, Viktoriia M. Yefremenko, Nataliia Ye. Havrylova, Olena K. Syrotynska, Anna Yu. Chekhovska, Oleksandr D. Mokhunko
DYNAMICS OF STUDENTS' PHYSICAL WELL-BEING INDICATORS DURING QUARANTINE RESTRICTIONS 1436
- Yulia G. Kolenko, Tetiana O. Timokhina, Olesya V. Lynovytska, Olena V. Cherkasova, Ilona S. Semenova
INDICATORS OF DENTAL HEALTH AND LOCAL IMMUNITY IN YOUNG ADULTS WHO HAVE SUFFERED FROM CORONAVIRUS INFECTION 1443
- Kostiantyn V. Prontenko, Ivan M. Okhrimenko, Olena O. Yevdokimova, Kateryna R. Mannapova, Volodymyr M. Filonenko, Luliia L. Tverdokhvalova, Liliia O. Bondarenko
PECULIARITIES OF FORMATION OF CADETS' PSYCHOLOGICAL RESILIENCE AND PHYSICAL READINESS FOR COMBAT STRESS 1450
- Oleksii V. Tymoshenko, Zhanna H. Domina, Valerii V. Trotsenko, Serhii V. Sembrat, Andrii O. Artiyushenko, Oleksandr A. Tomenko, Romana R. Sirenko
DEVELOPMENT OF COORDINATION ABILITIES IN 6-10 YEARS OLD BOYS WITH POSTURAL DISORDERS 1457
- Mykhailo F. Khoroshukha, Grygoriy P. Griban, Anatolii I. Bosenko, Natalia A. Lyakhova, Alla M. Harlinska, Pavlo P. Tkachenko, Anna A. Bondar
INFLUENCE OF SEROLOGICAL MARKERS OF BLOOD GROUPS UPON THE DEVELOPMENT OF VISUAL MEMORY IN HIGH SCHOOLERS AND STUDENTS 1464
- Borys P. Savchuk, Inga V. Yehorova, Oksana V. Vintoniak, Ruslan M. Kotenko, Nadiya O. Fedchyshyn, Svitlana Yu. Nesterova, Halyna V. Bilavych
EMOTIONAL INTELLIGENCE AS A FACTOR IN STRENGTHENING THE STUDENTS' MENTAL HEALTH DURING THE COVID-19 PANDEMIC 1470
- Andrii A. Borysenko, Anna M. Antonenko, Vasyl Aleksiiichuk, Mykola Kondratiuk, Igor Pelo
COMPARATIVE HYGIENIC ASSESSMENT OF THE POTENTIAL DIQUAT HAZARD TO THE POPULATION WHEN CONSUMING AGRICULTURAL CROPS TREATED WITH THE REGLONE AIR 200 SL FORMULATION USING DIFFERENT APPLICATION TECHNOLOGIES (UAV, AERIAL, HIGH-CLEARANCE ROD SPRAYER TREATMENT) 1478

Volodymyr O. Korshnyak, Julia V. Bovt, Oleksandr R. Pulyk, Oleksandr M. Stoyanov
MINE-BLAST TRAUMA AS A FACTOR IN THE EARLY DEVELOPMENT OF VASCULAR DISEASES OF THE BRAIN 1485

REVIEW ARTICLES

Ruzhena Matkivska, Inga Samborska, Oleksandr Maievskyi
EFFECT OF SCORPION VENOM TOXINS ON STRUCTURAL AND FUNCTIONAL PARAMETERS OF INTERNAL ORGANS,
INCLUDING KIDNEYS (REVIEW) 1491

CASE STUDIES

Oleksandr Pulyk, Myroslava Hyryavets, Vladyslava Ahij
CHRONIC MIGRAINE. CASE REPORT 1499

CAUSES OF ANXIETY DURING PLAY AS A FACTOR OF NEGATIVE IMPACT ON THE HEALTH OF PRESCHOOL AND SCHOOL CHILDREN

DOI: 10.36740/WLek202306113

Tetiana Miyer¹, Anna Klim-Klimaszewska², Svitlana Palamar¹, Olga Kotenko¹, Hennadii Bondarenko¹,
Liudmyla Nezhyva¹, Yurii Savchenko¹

¹BORYS GRINCHENKO KYIV UNIVERSITY, KYIV, UKRAINE

²HUMAN SIEDLCE UNIVERSITY OF NATURAL SCIENCES, SIEDLCE, POLAND

ABSTRACT

The aim: Generalization of the results of research by various scientists in the context of anxiety as a stable personality trait, determining the list of causes of anxiety during play in children of preschool and school age.

Materials and methods: The research was conducted within the framework of the agreement for international cooperation between Borys Grinchenko Kyiv University and University of Natural Sciences and Humanities in Siedlce. 400 people took part in the research from the Ukrainian side, 125 people from the Polish side, a total of 525 people. Of them: 130 (100/30) preschool children, 132 (105/27) primary school children, 130 (96/34) adolescents and 133 (99/34) young people.

The methodologies "CMAS Explicit Anxiety Scale" (adapted by A. Prihozhan) and "Personal Anxiety Scale" (A. Prihozhan) were used to achieve the stated goal of the research.

Results: Play as a social phenomenon has a positive impact on the health of preschool and school children. The positive impact is in identifying and resolving emotional and social issues. Negative effects on the health of preschool and school-age children have also been identified. This is the formation of anxiety as a stable personality trait. Three blocks of causes of anxiety in children of preschool and school age have been identified. The first block of reasons concerns the low level of organization of preparation for the game. The second block includes the reasons that are a consequence of the low level of the game process. Subjective experience of participation of children of preschool and school age in the game is reflected in the third block of reasons "Negative subjective result of the game".

Conclusions: The article summarizes scientific data on the need to take into account during play the levels of activity of preschool and school age children, their individual psychophysiological capabilities and the existing situational and personal anxiety. Also, three blocks of causes of anxiety during the game were identified (block I – during the preparation of the game; block II – during the game; block III – getting a negative subjective result in the game).

KEY WORDS: preparation for the game, participation in the game, negative subjective result of participation in the game

Wiad Lek. 2023;76(6):1413-1421

INTRODUCTION

A sign of modernity is the impact on a person of changing information flow, global and regional socio-economic transformations, manifestations of growing instability, changes in lifestyle and rhythm. These and other signs of modernity cause anxiety in people of all ages. On the one hand, any unknown situation that is perceived as dangerous, causes person negative feelings (anxiety, fear, panic). These negative feelings are a form of internal psychological tension and a factor that causes the formation of neurotic states or exacerbates existing ones. On the other hand, any serious ordeal pushes a person to rethink their life, their values, discover new abilities and talents, rethink the meaning of their existence, a sharp change in attitude

to themselves and the world, and change the direction of life. The described manifestations characterize human development in modern conditions. Of course, the negative impact of modern signs on the psyche of a child of preschool and school age is somewhat offset by the process of its gradual socialization. At the same time, the process of gradual socialization of the child is permeated with situations that cause the formation of the child's various personality traits, including anxiety.

The described manifestations characterize human development in modern conditions. Of course, the negative impact of modern signs on the psyche of a child of preschool and school age is somewhat offset by the process of its gradual socialization. At the same time, the process of gradual socialization of the child

is permeated by various situations. These situations cause the formation of various personality traits in the child, including anxiety. The described manifestations characterize human development in modern conditions. Of course, the negative impact of modern signs on the psyche of a child of preschool and school age is somewhat offset by the process of its gradual socialization. However, different situations permeate the process of gradual socialization. These situations cause the formation of the child's various personality traits, including anxiety.

Anxiety is the experience of emotional discomfort associated with anticipation of trouble, with a sense of danger. H. Miklyaeva [1] referred to the term "anxiety level" as a person's tendency to perceive most life situations as threatening, as well as individual sensitivity to stress. Taking into account the level of anxiety A. Prihozhan [2] analyze anxiety as a factor that can help mobilize mental reserves, stimulate search activity, and as a factor that outside the optimal values of anxiety negatively affect the child's behavior and activities.

Researchers have linked anxiety to various processes. According to L. Bozhovych [3], anxiety arises as a result of negative emotional experience, low self-esteem of their capabilities. A. Prihozhan [2] see the emergence of anxiety in the deepening of negative emotional experiences and in experiencing situations that may threaten the child's sense of self-worth. D. Elkonin [4], G. Kostyuk [5] attribute to the causes of anxiety and fears in younger students family and school environment, as well as communication with peers. According to the research's, in the senior preschool age anxiety can be formed as a stable personality trait and be part of the subjective component of the structure of self-regulation of child behavior.

THE AIM

The purpose of this work is to summarize the results of research by various scientists in the context of anxiety as a stable personality trait. Also, determine the list of causes of anxiety during play in children of preschool and school age.

Research hypothesis. Involving preschool and school age children in the game without taking into account the causes of anxiety during the preparation of the game, in the process of its implementation and in the context of receiving negative results from the game may have a negative impact on their health.

Tasks of research. 1. Summarize scientific data on play as a social phenomenon. Reveal the importance of the game process for preschool and school children. 2. To generalize scientific data on anxiety as a stable person-

ality trait and the period of trait formation in children. 3. Analyze the results of scientific research and summarize data on the levels of activity of preschool children and individual differences in psychophysiological capabilities of schoolchildren, which will serve as a basis for determining the conditions of anxiety in preschool and schoolchildren during play. 4. To summarize the results of the experiment in the blocks "Low level of organization of preparation for the game", "Low level of the game process" and "Negative subjective result of the game". 5. To draw conclusions about the causes of anxiety during play as a factor of negative impact on the health of preschool and school children.

MATERIALS AND METHODS

The set of methods is used in the work: theoretical (analysis, synthesis, comparison, systematization, generalization) and empirical (observations, conversations, questionnaires). Using theoretical methods, 23 scientific sources were analyzed, which were published in the period 1988-present in printed format.

Conducting research to identify the causes of anxiety during the game was organized in the following sequence:

- 1) acquaintance of the respondents of each age category with the new game. The game "Bear and Bunnies" was offered to preschool children, the game "Crucian and Pike" to primary school children, and the game "Shadow Leader" to adolescents and young people. During the games, special attention was paid to the emotional state of the children (at the beginning of the game, during it, after the end of the game). And how children reacted to the distribution of roles was also studied; how they interacted with other game participants; as expressed a desire to play with the same composition of participants (variable composition of participants).
- 2) involvement of respondents of each age category in the organization of the game. The children were asked to organize the games that they liked the most (liked by each of the respondents). At this stage of the research, special attention was paid to: children's attitude to the game initiatives of others; active performance of main and secondary roles in the game; change in emotional state in activity.
- 3) conducting conversation with of preschool children using the questions of the 1st block; surveying respondents of primary school children using the questions of the II block, adolescents and young people using the questions of the III block.

Three blocks of questions were developed for the research:

- *The first block* is a question for preschool children (Do you want to be a bear (main role) or a bunny (secondary role) in the game? Why? Do you always like the role you have to play? Why? You will be upset if you have to become a bunny (play a secondary role)? Why? Do you want to choose the role yourself or do you want adults to decide the role you will play in the game? Why? Are you interested in playing new games? Why? Do you want to play a new game with all the children or only with friends? Why? Do you always not want to play with all the kids, or just today? Do you cry while playing? Why? Do you remember why you cried? Do you want to play this game again? Why?).
- *The second block* are questions for primary school children (How do you think roles should be distributed in the game? Do you always like the distribution of roles in the game? What role in the game do you always want to play: main or secondary? Why do you always want to play main role in a game? Do you get upset when you have to play a secondary role? Are you interested in playing a new game with the whole class or just with your friends? Do you remember a game that made you really, really sad? Do you want to play that game today? Why? What can the game teach? What is your experience of the game, positive or negative?).
- *The third block* are questions for adolescents and young people (Does your mood depend on the role you have to play in the game? How do you think the roles in the game should be distributed? Do you always want to play the main role? Why? Are you interested in a new game with classmates or a new game with friends? Why? How often do you suggest a new game to classmates or friends? Do you remember a game in which you had a negative experience? Do you want to play that game again to gain a positive experience? Why? Do you think about knowledge and skills when you play a game? Do you think it is possible to play a game and study at the same time? What is your favorite game?).

The method of collecting information had certain differences for each category of respondents. Educators who worked with these children were involved in interviews with preschool respondents. Educators asked the questions of block I to each child individually and recorded their answers on a form that was developed according to the questions of block I. Teenagers and young men also took part in the questionnaire, prepared on the basis of the questions of the III block.

The research was conducted within the framework of the agreement for international cooperation between Borys Grinchenko Kyiv University and University of Natural Sciences and Humanities in Siedlce. 400 people

took part in the research from the Ukrainian side, 125 people from the Polish side, a total of 525 people. Of them: 130 (100/30) preschool children, 132 (105/27) primary school children, 130 (96/34) adolescents and 133 (99/34) young people.

The criterion for inclusion in the category of "respondents" was defined as studying in basic institutions of universities where students undergo pedagogical practice. The personal desire of each child was defined as the exclusion criterion. A sample of primary statistical data was obtained as a result of a specially targeted survey. The sample is representative, as it maximally reflects the properties and structure of the general population (those who have a certain level of education in Ukraine and Poland).

To research the causes of anxiety during the game, the coefficient (Kz) was used - the ratio of the sum of positive answers to the total number of questions. A negative answer (correlated with the words "I don't like") was evaluated with one point, a positive one (correlated with the words "I like") - zero. The maximum number of points is 10. If Kz was equal to 0.8-1.0 (the respondent received 8-10 points), which meant a high level of influence of the cause on the occurrence of anxiety during the game; Kz = 0.79-0.60 (5-7 points) - average level, Kz < 0.60 (less than 4 points) - low level.

The Kz coefficient was calculated according to the formula:

$$K = \frac{X_{\Pi} \times 100\%}{\Pi}, \text{ where:}$$

X_{Π} - the number of negative answers of all respondents of the age group;

Π - the maximum possible number of negative answers in the group;

$\Pi = (\text{number of respondents}) \times (\text{number of questions})$.

RESULTS

In this article, we consider the occurrence of anxiety during the game. We focus on the game, because the game is "a form of free expression of a person of any age, unfolds either in the form of competition or in the form of images (performance, representation) of certain situations, meanings, states" [6].

Regarding children of preschool and school age, scientists consider play as a social phenomenon, as the game arose in response to the "needs of children to become active members of society" (M. Stelmakhovich) [7]. The game arises from the living conditions of the child in society. In the game, the child is aware of the

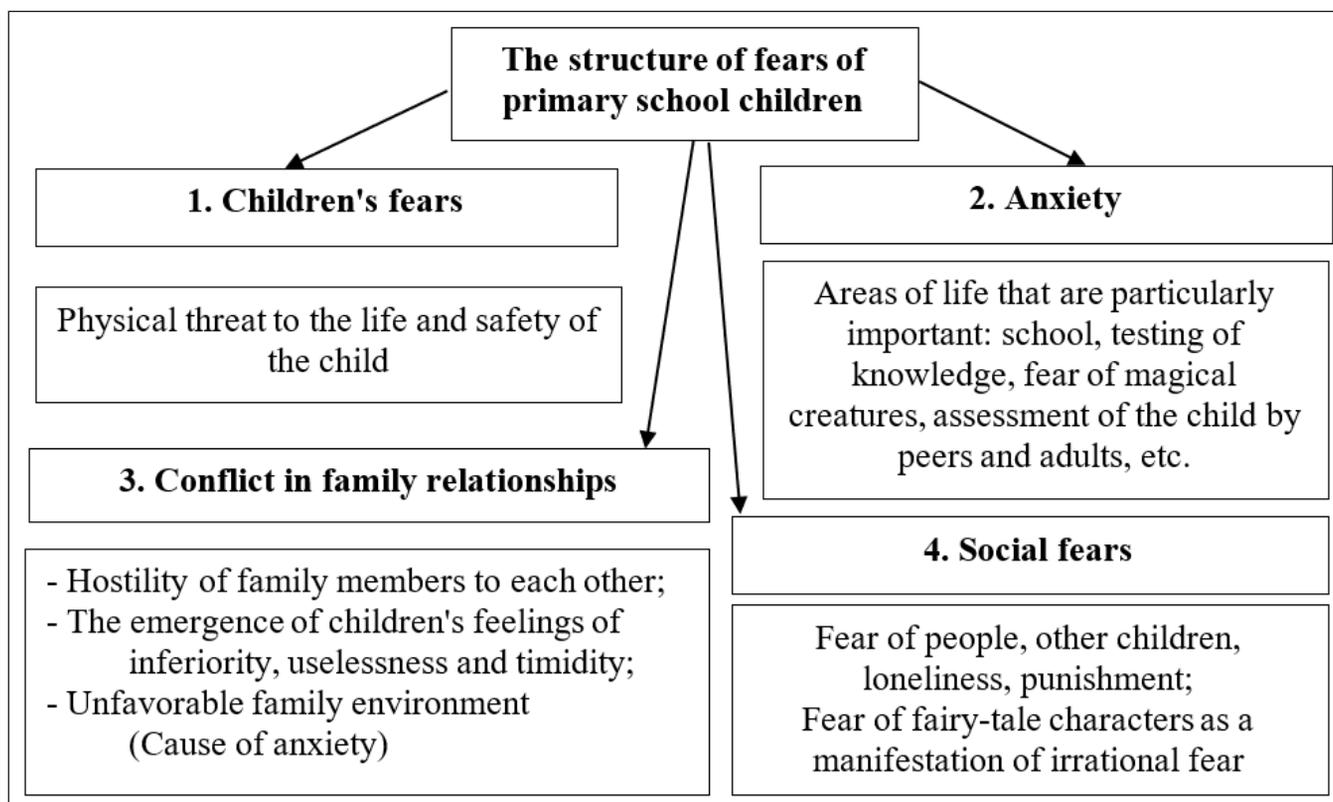


Fig. 1. Four-factor structure of fears of primary school children (Figure developed by the authors of the article based on the scientific work of H. Miklyaeva [1])

variety of human objects. Play is an activity through which children reproduce social relations between people, learn to transform reality, change the world (O. Bessarabova) [8].

Play is the main activity for preschool children. The child's need to influence the world, to become a subject of his activity is first formed and manifested in the game. According to S. Rubinstein [9], when a child plays a role, he is transformed into another person. In the course of the game, the child expands, enriches, deepens his own personality.

Play is the main form of active activity of the child. During the game, the preschool child meets his biological needs. The child implements the output of excess energy; satisfies the desire to become a leader; manifests itself as a person; checks own opportunities in collective activity; in a way manifests itself among peers; satisfies the need for rest, etc. (P. Blonsky [10], L. Bozhovich [3], D. Elkonin [4], G. Kostyuk [5]).

Scientists consider the game as a means of teaching school-age children (N. Anikieva [11], P. Podkasisty [12] and others), the formation of their cognitive activity (V. Zakharov [13], T. Shukurov [14]). Also, the game is a means of mental development and use of mental potential (J. Bruner) [15]. Play is an important method of forming social behavior and accumulating practical life experience of the child [7]. During the game, students can experiment with different situations, test their

abilities and skills, develop communication skills and learn social relationships and roles. For young people, the game becomes a form of self-affirmation in front of society [16].

We emphasize that the process of play can have different effects on children's health, namely:

1. Positive impact. The game helps to identify and solve emotional and social problems (According to Freud, the game is a symbolic repetition of a situation that in the past caused the child psychological trauma). Compared with traditional learning contributes to more effective development of skills [17].
2. Negative impact. Participation in the play process can cause anxiety in preschool and school-age children, i.e. have a negative impact on their health. This research focuses only on the negative impact of play on children's health, which is recorded as anxiety.

The analysis of scientific works was carried out in order to summarize information about anxiety as a stable personality trait that has developed in preschool and school age children. First of all, we singled out the work of D. Usyk [18]. The scientist's study concluded that anxiety, which in older preschool age acquires the quality of a stable personality trait and can be included in the subjective component of the structure of self-regulation of behavior.

In H. Miklyaeva's [1] research, anxiety was defined as one of the factors of the four-factor structure of fear (Fig 1).

H. Miklyaeva [1] studied the levels of anxiety and fear in younger students. The scientist found that children aged 8-9 years have an average level of anxiety. 49% of children showed a high level of fear of animals and an average level of fear of fairy-tale characters (49%), medical (52%), socially mediated (43%) and spatial (45%) fears; low level of fear of darkness and nightmares (50%) and fear of physical injury (50%).

Researchers also drew attention to gender differences in anxiety and fear. According to the results of research, boys have higher levels of anxiety and lower rates of autonomy of subjective regulation than girls (D. Usyk [18]). Primary school boys are more likely to show interpersonal anxiety, general anxiety, hostility in a family situation (H. Miklyaeva [1]). Girls are prone to medical fears, fear of physical injury, fear of death, fear of animals, fear of darkness and nightmares, spatial fears (H. Miklyaev [1]).

D. Usyk [18] established that the interaction of children in the plot-role has certain gender differences. Girls prefer domestic and professional plots. The boys like moving games with a less pronounced plot. In the game interaction, boys are more likely to conflict, talk less about the plot, roles and temporal parameters of the game.

Researchers are considering anxiety in the context of adolescents' and young people's understanding of the phenomenon of "my health." According to the research of O. Bogucharova [19], adolescents and young people, on the one hand, show a willingness to take responsibility for their health, and, on the other - understand the dependence of health on other factors (anxiety and fears, life satisfaction, positive experience, extroversion as a vector of activity). O. Bogucharova [19] notes that adolescents treat health as a list of a set of physical and mental characteristics, while young people associate health with the image of the physical self. High levels of positive values cause tension in adolescents and cause them to be almost constantly in a state of anxiety, which, in turn, leads to the further formation of anxiety as a personality trait. For young people, constant anxiety is weakened. O. Bogucharova [19] explains this process by the emergence of certain personal formations (freedom of choice, responsibility, autonomy, self-worth and life satisfaction) and the existing positive experiences that operate at the highest mental level - the level of subjectivity.

Also, the analysis of scientific works was carried out in order to summarize information on levels of activity. Anxiety during play can be caused by not taking into account the levels of activity inherent in preschool and school-age children. In the context of the above, we consider the results of M. Savchenko's [20] research to

be significant. The scientist identified sufficient, medium and low levels of activity of older preschool children during the game.

As a result of M. Savchenko's [20] research it was established that medium and low levels of activity predominate in children of older preschool age during play. Children with a low level of activity in the game do not show active actions when choosing a role and in the process of its implementation. They focus on other children's play ideas and do not offer their own ideas for organizing the game. Game actions depend on the toy or game attribute. The actions of children are monotonous. They often repeat the same actions with objects, because the plot of the game is missing. Children do not show persistence in achieving their own result in the game; do not follow the rules of conduct established by other players in the game. Instead of actively participating in the game, the children watched with interest the actions of other participants in the game.

The activity of middle-level children is aimed at realizing the role of play and expressing their own ideas about the game plan. Children try to realize the game idea. They independently determine the roles; participate in the distribution of roles in the game. Children follow certain rules of the game. They resent it when other players break the rules. Students are also interested in fulfilling a role that does not involve making independent decisions and influencing the overall course of the game.

Only 7% of children show a sufficient level of activity during play. According to M. Savchenko [20], children of this level of activity are characterized by: 1. Active actions aimed at realizing their own role in the game and activating other participants in the game. 2. Expression of own ideas on the organization of the game and the idea for the implementation of all its participants in the game. 3. Definition of roles in the game and their distribution among the participants of the game, expression of awareness in the implementation of their role. 4. Appropriate use of role speech; tendency to conflict in case of inconsistency of actions with partners and withdrawal from the role. 5. Do not need tips from adults to diversify and clarify the game activities. Children independently follow the rules of behavior in the game. They are persistent in achieving the result of the game. Children are able to control their own play activities and the actions of other participants in the game.

In relation to junior schoolchildren, we consider the work of M. Alekseeva [21] to be significant. The scientist determines the range of individual differences in the psychophysiological abilities of 1st grade students (including attention, memory, thinking, imagination, etc.) using a ratio of 1:15. This means that if the capabilities of the weakest

child are taken as one, then the capabilities of the strongest student will be equal to 15 units, i.e. will be 15 times higher. Indicators of children's abilities are very diverse.

This may be the number of repetitions required to memorize and reproduce the information. The amount of time it took to perform a certain action on your own, etc. M. Alekseeva [21] explains a certain range, first, the age differences of children (one child turned six years old, and the other children will soon turn 7 years old); secondly, children have different anatomical and physiological traits for future physical development; third, differences in the conditions of upbringing of children in preschool and school age.

According to L. Nozdrova's [22] research, differences in the readiness of junior schoolchildren for the learning process are significantly deepening. This is due to a number of factors.

1. Additional training of some students during the holidays.
2. Purposeful mastery of various techniques for organizing their working time.

We also consider significant the results of A. Sheiko's [23] research, which deals with the readiness of adolescents and young people to overcome critical situations. Critical situations can be caused by instability, dissatisfaction with the need for interpersonal communication, prestige and respect, insufficient formation of a stable image of "I", lack of experience in effective social interaction. According to the scientist's generalizations, mentally stable adolescents and young people show higher rates of self-organization, emotional intelligence, problem-orientation, and lower rates of situational and personal anxiety, motivation to achieve and focus on social support.

Mentally resilient adolescents and young people are characterized by greater self-organization, determination, and a tendency to imagine themselves as a strong person who has sufficient freedom of choice and acts in accordance with their goals. A. Sheiko [23] notes that critical situations that arise in the learning process lead to a statistically significant increase in the level of personal anxiety. While critical situations in everyday life affect the level of general stress, they cause significant changes in self-organization indicators.

We conducted an experiment to determine the causes of anxiety during the game. The survey of preschool children revealed the causes of anxiety at the stage of organizing the game.

1. The distribution of roles in the game without taking into account the wishes of game participants (78% of cases; $p0,001$).
2. Inconsistency of the game plot with the actual cognitive needs of the game participants (62% of cases).

Because of the analysis of the questionnaires of school-age children, another list of causes of anxiety during the game was established. For children of primary school age it is:

1. Appointment to the main roles of the same participants in the game (92% of cases; $p0,001$).
2. Lack of desire to play a secondary role in the game (54% of cases; $p0,001$).
3. Recalling the negative experience of participating in games (29% of cases; $p0,001$).

In adolescence, other reasons dominate, in particular:

1. Unwillingness to interact with a particular participant in the game (52% of cases; $p0,001$).
2. Inconsistency between the plot of the game and the actual cognitive needs of game participants (48% of cases; $p0,001$).

The causes of anxiety during the game in young people include.

1. The mismatch between the plot of the game and the actual cognitive needs of game participants (89% of cases; $p0,001$).
2. Unwillingness to interact with a particular participant in the game (45% of cases; $p0,001$).
3. Recalling negative experiences of participating in previous games (32% of cases; $p0,001$).

We also investigated the stage of children's participation in the game. Anxiety was recorded when preschool children were partially aware of the role to be played (68% of cases; $p0,001$). Primary school students experience anxiety when the role requires significant intellectual effort from them, which prevents them from enjoying the game process itself (73% of cases; $p0,002$).

Anxiety in adolescents is caused by the following factors.

1. Fulfilling the role requires the application of knowledge and skills that are formed at a low level (51% of cases).
2. External motivation to participate in the game (45% of cases; $p0,001$).

Anxiety in young people's is caused by two reasons.

1. Fulfilling the role requires significant intellectual effort from the participant of the game. This prevents enjoyment of the game process itself (43% of cases; $p0,001$).
2. Fulfilling the role requires the application of knowledge and skills that are formed at a low level (38% of cases; $p0,001$).

Anxiety in preschool children was also recorded as a result of negative experiences of participation in the game (58% of cases; $p0,001$). Primary school students felt anxious when they had negative associations with the game process (63% of cases; $p0,001$). Anxiety in adolescents is caused by lack of satisfaction with the

game process (72% of cases; $p < 0,002$) and lack of positive dynamics in personal development (48% of cases; $p < 0,001$). The causes of anxiety in young people include lack of satisfaction with the game process (70% of cases; $p < 0,001$). As well as the presence of the process of transferring negative emotions that arose during the game, to overt or covert confrontation in interpersonal interaction during school and extracurricular time (34% of cases; $p < 0,001$).

DISCUSSION

Play is the main activity of preschool children and one of the activities of primary school children, adolescents and young people. The wide range of use of the game in the process of teaching children is explained by the variety of its types (story-role play, educational game, business game, etc.) and the purpose of implementation. Compared to traditional learning, involving children in play has a positive effect on their mental development, helps to solve emotional and social problems. At the same time, the process of the game can cause anxiety in its participants and have a negative impact on their health.

Anxiety as a stable personality trait can be formed in older preschool age (D. Usyk [18]). Anxiety is included in the structure of self-regulation of behavior (H. Miklyaeva [1]). Primary school students are most likely to show anxiety in areas of life that are particularly important to them. This is school education, situations of testing knowledge, fear of magical creatures, evaluation of the child by peers and adults, etc. (H. Miklyaeva [1]). Adolescents and young people are characterized by an understanding of the dependence of health on anxiety and fears (O. Bogucharova [19]).

Medium and low levels of activity predominate in older preschool children. In particular, children with low levels of activity often observe the actions of other participants with interest instead of actively participating in the game. Medium-level children are interested in the implementation of role-playing actions and the implementation of the role, which does not provide for independent decisions that affect the overall course of the game (M. Savchenko [20]). The activity of primary school children in the game depends on individual psychophysiological capabilities. If the capabilities of the weakest child are taken as one, the capabilities of the strongest student will be almost 15 times higher. (M. Alekseeva [21]). Mentally stable adolescents and young people in comparison with the unstable show lower rates of situational and personal anxiety, achievement motivation and focus on seeking social support (A. Sheiko [23]).

Causes of anxiety during the game are divided into three blocks.

Block I – “Low level of organization of preparation for the game”. The block includes the following reasons: 1. The distribution of roles in the game without taking into account the wishes of game participants. 2. Appointment to the main roles of the same participants in the game. 3. Lack of desire to play a minor role in the game. 4. Mismatch between the plot of the game and the current cognitive needs of game participants. 5. Recalling the negative experience of participating in games. 6. Unwillingness to interact with a particular participant in the game.

Actions to eliminate the causes of anxiety at the level of the game preparation organization:

1. Take into account the wishes of children when assigning roles in the game. Avoid the occurrence of a conflict situation due to the child's reluctance to play a secondary role.
2. Do not assign the same players to the main roles.
3. Select the plot of the game taking into account the actual cognitive needs of the game participants.
4. Timely identify the negative experience of participating in the games that were held earlier, and promote the replacement of this experience with a positive one.
5. Take into account the reluctance of individual game participants to interact with each other.

- Block II – “Low level of the game”. The following reasons are included in the block: 1. Partial awareness of the participants of the game of the essence of the role. 2. Organization of the game without prior trial play of its plot. 3. Fulfilling the role requires significant intellectual effort from the participant of the game. This prevents from enjoying the gameplay itself. 4. Fulfilling the role requires the application of knowledge and skills that are formed at a low level. 5. External motivation to participate in the game. 6. Game participants do not want to communicate directly.

Actions to eliminate the causes of anxiety at the level of the game process:

1. To organize a test play of the plot of the game to eliminate the partial understanding of the essence of the role to be performed by the participants of the game.
2. Determine such a level of intellectual load during the game that will not prevent enjoyment of the process itself.
3. Use didactic materials that will help a game participant with a low level of knowledge and skills to enjoy the game process and master new knowledge and skills.
4. Transfer the external motivation of participation in the game to the internal one (I want to play because...)
5. Use your own example to show examples of possible communication between game participants.

- Block III – “Negative subjective result of the game”. The block includes the following reasons: 1. Getting a negative experience of participating in the game. 2. Lack of pleasure from the game process. 3. Lack of positive dynamics in personal development. 4. Formation of negative associations in the participants of the game. 5. Transfer of negative emotions that arose during the game, to overt or covert confrontation in interpersonal interaction in the educational and extracurricular time.

Actions to eliminate the causes of anxiety at the level of a negative subjective result of the game:

1. To prevent children from having a negative experience of participating in the game and negative associations with the game process.
2. End the game at the moment when the children are enjoying the game process.
3. To record positive dynamics in the personal development of children (for example, we learned to be attentive and overcome obstacles).
4. To prevent the transfer of negative emotions that arose during the game to overt or hidden confrontation in interpersonal interaction in educational and extracurricular time

CONCLUSIONS

In accordance with the purpose of the study, it was found that the game is used for the purpose of education, upbringing, development and socialization of children of preschool and school age. The originality of the study is that the game process is analyzed for the first time not in the context of a positive impact on children’s health, but in the context of the negative. In addition, for the first time, the causes of anxiety during the game are determined. These reasons are arranged in three blocks “Low level of organization of game preparation”, “Low level of the game process”, “Negative subjective result of the game”. The impact of the results of the game on the use of mental self-management techniques by adolescents and young people, which in turn has a positive effect on their health, remains controversial. And also questions about the presence of intrapersonal conflicts, which can be caused by subjective factors (emotional instability of teenagers and young men, low self-criticism, impulsivity, exaggerated harassment, depressive state) and objective factors (external influences, biorhythms, tense relations).

REFERENCES

1. Mikliaieva HM. Osobystisno-rolovy pidkhid u psikhokorektsii tryvozhnosti molodshykh shkoliariv. [Personality-role approach in psychocorrection of anxiety of junior schoolchildren] Avtor. dys. . . . kand. psykhn. nauk: 19.00.07 – pedahohichna ta vikova psikhohiia. Kharkiv. 2014, p.20. (In Ukrainian).
2. Prihozhan A. Psihologiya trevozhnosti. Doshkolnyiy i mladshiy shkolnyiy vozrast. [Psychology of anxiety. Preschool and primary school age] Sankt-Peterburg. Piter. 2007, p.35. (In Russian).
3. Bozhovich LI. Izbrannyye psihologicheskie trudyi. Problemyi formirovaniya lichnosti. [Selected psychological works. Problems of personality formation] Moskva: Mezhdunarodnaya pedagogicheskaya akademiya. 1995, p.209. (In Russian).
4. Elkonin DB. Psihologiya igryi. [Game psychology] Moskva: Pedagogika. 1978, p.304. (In Russian).
5. Kostiuk HS. Navchalno-vykhovnyi protses i psikhichniy rozvytok. [Educational process and mental development] Kyiv. 1989, p.297 (In Ukrainian).
6. Honcharenko S. Ukrainskyi pedahohichniy slovnyk. [Ukrainian pedagogical dictionary] Kyiv: Lybid. 1997; 374: 73. (In Ukrainian).
7. Stelmakhovych MH. Ukrainska narodna pedahohika. [Ukrainian folk pedagogy] Kyiv: IZMN. 1997, p.232.
8. Bessarabova OV. Hra yak zasib rozvytku piznavalnoi diialnosti u slabozorykh ditei [Play as a means of developing cognitive activity in visually impaired children]. Avtor. . . . dys. kand. ped. nauk: 13.00.03 – korektsiina pedahohika. Zaporizhzhia. 2011, p.20. (In Ukrainian).
9. Rubinshteyn SL. Osnovyi obschey psihologii. [Fundamentals of general psychology]. Sank-Peterburg: «Piter». 1999; 720:488. (In Russian).
10. Blonskiy PP. Psihologiya mladshhego shkolnika [Psychology of a younger student] Akademiya pedagogicheskikh i sotsialnyih nauk; Moskovskiy psihologo-sotsialnyiy institut. Moskva: Izd-vo “Institut prakticheskoy psihologii”. 1997, p. 575. (In Russian).
11. Anikeeva NP. Vospitanie igroy. [Education in game] Kniga dlya uchitelya. Moskva: Prosveschenie. 1987, p.144 (In Russian).
12. Pidkastyiy PI, Haydarov ZhS. Tehnologiya igryi v obuchenii i razvitii. [Game as a technology of learning and development] Uchebnoe posobie. Moskva: Rossiyskoe pedagogicheskoe agentstvo. 1996, p.272. (In Russian).
13. Zaharov VM. Intellekturnyye igryi kak sredstvo formirovaniya poznavatelnoy deyatelnosti uchaschihsya. [Intellectual games as a means of forming the cognitive activity of students] Avtoref. na soiskanie nauch. stepeni kand. ped. nauk: spets.13.00.01 «Teoriya i istoriya pedagogiki». Moskva. 1988, p.24. (In Russian).
14. Shukurov TA. Pedagogicheskaya sistema igrovyyih form organizatsii poznavatelnoy deyatelnosti shkolnikov. [Pedagogical system of game forms of organization of cognitive activity of schoolchildren] Avtoref. na soiskanie nauch. stepeni kand. ped. nauk: spets. 13.00.01 «Obschaya pedagogika». Dushanbe. 1999, p.48. (In Russian).
15. Bruner Dz. Igra, myshlenie i rech. [Play, thinking and speech] Perspektivyyi: voprosyi obrazovaniya. 1987;1:73–81. (In Russian).

16. Kulish IM. Chy potribno studentu hratsyia? Vykorystannia dydaktychnoi hry u pidhotovtsi fakhivtsiv riznykh spetsialnostei. [Does the student need to play? The use of didactic games in the training of specialists in various specialties] *Humanitarni nauky*. 2001; 2: 112–116. (In Ukrainian).
17. Neverkovich SD. Igrovye metodyi podgotovki kadrov. [Game training methods] *Uchebnoe posobie*. Moskva: Vysshaya shkola. 1995, p.207. (In Russian).
18. Usyk DB. Psykholohichni osoblyvosti samorehuliatcii povedinky starshykh doshkilnykiv u suzhetno-rolovii hri [Psychological features of self-regulation of behavior of senior preschoolers in a plot-role game]: avtor. dys. . . . kand psykhol. nauk: 19.00.07 – pedahohichna ta vikova psykholohiia. Kharkiv. 2013, p.20. (In Ukrainian).
19. Bohucharova OI. Zdorovia osobystosti u psykholohichnii perspektyvi. [Health of personality in the context of a psychological perspective] Kyiv. 2004, p.284. (In Ukrainian).
20. Savchenko MV. Vychovannia samostiinosti u ditei starshoho doshkilnogo viku v ihrovii diialnosti. [Education of independence in older preschool children in play activities] Avtoref. dys. . . . kand. ped. nauk: 13.00.08 – doshkilna pedahohika. Odesa. 2014, p.20. (In Ukrainian).
21. Aleksieieva MI. Motyvy navchannia uchniv. [Motives for student learning] *Posibnyk dlia vchyteliv*. Kyiv. 1974; 153: 50–52. (In Ukrainian).
22. Nozdrova OP. Dydaktychni ihry yak zasib vyrivniuvannia indyvidualno-piznavalnykh rozbizhnosti ditei 6 – 7 rokiv. [Didactic games as a means of equalizing individual and cognitive differences of children 6-7 years] *Pochatkova shkola*. 2007; 5: 50–53. (In Ukrainian).
23. Sheiko AO. Osoblyvosti proiavu psykhnichnoi stiikosti osobystosti v yunatskomu vitsi pry podolanni krytychnykh sytuatsii. [Features of manifestation of mental stability of the person in the period of youth at overcoming of critical situations] Avtor. dys. . . . kand. psykhol. nauk: 19.00.07 – pedahohichna ta vikova psykholohiia. Kharkiv. 2014, p.20. (In Ukrainian).

ORCID and contributionship:

Tetiana Miyer: 0000-0002-2874-2925^{A-F}

Anna Klim-Klimaszewska: 0000-0001-7418-9983^{A-F}

Svitlana Palamar: 0000-0001-6123-241X^{A-F}

Olha Kotenko: 0000-0001-8967-8130^{A-C,E}

Hennadii Bondarenko: 0000-0001-5978-5138^{A-E}

Liudmyla Nezhyva: 0000-0001-9520-0694^{A-C,E}

Yurii Savchenko: 0000-0003-3662-2787^{A-C}

Conflict of interest:

The Authors declare no conflict of interest.

CORRESPONDING AUTHOR

Svitlana Palamar

Borys Grinchenko Kyiv University

18/2 Bulvarno-Kudryavska St., 04053 Kyiv, Ukraine

e-mail: svetlana_03@ukr.net

Received: 01.06.2022

Accepted: 18.04.2023

A – Work concept and design, B – Data collection and analysis, C – Responsibility for statistical analysis, D – Writing the article, E – Critical review, F – Final approval of the article



Article published on-line and available in open access are published under Creative Common Attribution-Non Commercial-No Derivatives 4.0 International (CC BY-NC-ND 4.0)