

Editors
Yurty B. Melnyk
Lidia M. Georgieva



Current Issues of Education and Science

**9th International Conference, CIES-2021,
Riga, Latvia – Kharkiv, Ukraine, November 10–13, 2021,
Conference Proceedings**



Editors
Yuriy B. Melnyk
Lidia M. Georgieva



Current Issues of Education and Science

9th International Conference, CIES-2021,
Riga, Latvia – Kharkiv, Ukraine, November 10–13, 2021
Conference Proceedings



ISBN: 978-617-7089-14-7

DOI: <https://doi.org/10.26697/9786177089147.2021>

UDC: [37.015.3:167.1]-043.83-057.4(06)

BIC: JNFK; BISAC: EDU008000

Current Issues of Education and Science

9th Annual International Conference on Current Issues of Education and Science, CIES-2021, Riga, Latvia – Kharkiv, Ukraine, November 10–13, 2021, Conference proceedings

This official international academic event is included in the registers of the Ministry of Education and Science of Ukraine (Reg. No. 538 from 13.01.2021) and Ministry of Health of Ukraine (Reg. No. 387 from 24.12.2020).

It is printed according to the decision of the CIES-2021 Organizing Committee on behalf of the Scientific Research Institute KRPOCH from 13.11.2021 No. 204-9.

Introduction

This book constitutes the refereed proceedings of the 9th International Scientific and Practical Conference on Current Issues of Education and Science, CIES-2021, held in Riga, Latvia – Kharkiv, Ukraine, in November 2021 (<https://doi.org/10.26697/CIES-21>).

12 revised Conference papers were carefully peer reviewed and selected from 68 submissions. The papers are organized in topical directions: Social and Behavioral Sciences: Education; Psychology; Health Care Science. Materials are presented in English and Ukrainian. Responsibility for facts, quotations, private names, enterprises and organizations titles, geographical locations etc. to be bared by the authors. The Editors do not always share the views and thoughts expressed in the articles published.

The Conference proceedings are addressed to teachers of higher educational institutions, graduate students, students, specialists in the field of education, practical psychology, medicine, etc., who are interested in the current state of development of the social and behavioral sciences, as well as the health sciences.

Keywords: education, psychology, competence, creative potential, medical personnel, patient, health, stress, prevention, healthcare-associated infections, clinical strains, pathogenicity factors, autoantibodies, co-stimulatory molecules, regulatory molecules.

Editors and Affiliations

Yuriy B. Melnyk, Doctor of Philosophy in Pedagogy, Associate Professor, Kharkiv Regional Public Organization “Culture of Health” (KRPOCH); Scientific Research Institute KRPOCH, Kharkiv, Ukraine.

Lidia M. Georgieva, Doctor of Philosophy in Medicine, MD, Professor, Medical University – Sofia, Bulgaria.

Bibliographic Information

Book Title: Current Issues of Education and Science.

Book Subtitle: 9th International Conference, CIES-2021, Riga, Latvia – Kharkiv, Ukraine, November 10–13, 2021, Conference Proceedings.

Editors: Yuriy B. Melnyk, Lidia M. Georgieva.

Institutional Affiliation: Scientific Research Institute KRPOCH, Ukraine.

Publisher Name: Kharkiv Regional Public Organization “Culture of Health” (KRPOCH Publishing), Ukraine.

Copyright Information. Full or partial reproduction of articles is allowed, citing to the source, author(s) and DOI. The published papers are licensed under a Creative Commons “Attribution” 4.0 Worldwide. Conference proceedings design is the property of the KRPOCH Publishing. An electronic copy of the Conference proceedings in open access is available via the KRPOCH Publishing website (<https://publisher.culturehealth.org>).





CONTENT

EDITORIAL

- Melnyk Yu. B., Georgieva L. M.** 4
Message from the Editors of CIES-2021 Conference Proceedings

EDUCATION

- Manci I.** 7
The Role of Sports Activities in Students' Academic Achievements in Secondary Education
- Martyshova L. S.** 16
Modern Features and Trends in the Development of the Architectural Education System
- Orhani S.** 25
Integration Technology in Math Lessons

PSYCHOLOGY

- Polishchuk V. M.** 33
Problem Issues of the Psychological Science in the Actual Social Dimension (*in Ukrainian*)
- Kostiuchenko E. V.** 44
Creative Potential Development in the Structure of the Future Designer Professionalism
- Melnyk Yu. B., Stadnik A. V.** 52
Psychological Transformation Game "My Dao" as an Effective Method of Psychologist Practice (*in Ukrainian*)
- Usakli H.** 66
Social Emotional Learning During COVID-19

HEALTH CARE SCIENCE

- Boyko V. V., Avdosyev Yu. V., Sochnieva A. L., Yevtushenko D. O., Minukhin D. V., Shevchenko O. M.** 75
Biliary Decompression in Patients with Obstructive Jaundice
- Serenko A. A., Hroma V. G., Minukhin D. V., Yevtushenko D. O.** 83
Modern Endobronchial Methods in the Treatment of Chronic Lung Abscesses (*in Ukrainian*)
- Hordiienko P. O., Sochnieva A. L.** 92
Comparison of the Intensity of Pain in Patients with Acute Cholecystitis with Different Types of Surgical Accesses
- Dzhoraieva S. K., Shcherbakova Yu. V., Zuban I. V.** 98
Study of the Phenotypes of Clinical Isolates of Dominant Species of Staphylococcus, Isolated from Patients with Atopic Dermatitis
- Iarmak T. V.** 104
Medical Gloves and Their Importance for the Safety of Patients and Medical Personnel



**Current Issues of Education and Science, 2021
Conference proceedings. ISBN: 978-617-7089-14-7
<https://doi.org/10.26697/9786177089147.2021>
EDITORIAL**



DOI: <https://doi.org/10.26697/9786177089147.2021.01>

Message from the Editors of CIES-2021 Conference Proceedings

Yuriy B. MELNYK^{1,2} 

¹ *Kharkiv Regional Public Organization “Culture of Health” (KRPOCH),*

² *Scientific Research Institute KRPOCH, Ukraine*

Lidia M. GEORGIEVA³ 

³ *Medical University – Sofia, Bulgaria*

Corresponding Author Details

Yuriy B. MELNYK, YBM.office@gmail.com

Received: 15.11.2021; Accepted: 20.11.2021; Published: 17.12.2021

Dear Readers,

We are honored to publish the Proceedings of the 9th Annual International Conference on Current Issues of Education and Science, Riga, Latvia – Kharkiv, Ukraine, November 10–13, 2021 (CIES-2021).

The aim of the CIES Conference is scientific and practical analysis and systematisation of theoretical and methodological problems that are inherent in the educational process today, as well as development of organisational and methodological recommendations for stakeholders in education and science.

This official international academic event is included in the registers of the Ministry of Education and Science of Ukraine (Reg. No. 538 from 13.01.2021) and Ministry of Health of Ukraine (Reg. No. 387 from 24.12.2020).

CIES-2021 is initiated and supported by Scientific Research Institute Kharkiv Regional Public Organisation “Culture of Health” (Ukraine) and Simcord Information Services (Latvia) with the participation of partner organisations and scientists from 5 continents.



CIES-2021 Conference Organizing Committee includes the most authoritative scientists from 17 countries, 5 continents in the fields of Education, Psychology, Medicine.

CIES-2021 provides a scientific platform for presenting and discussing new trends and issues in the Social and Behavioral Sciences. 12 revised Conference papers were carefully peer reviewed and selected from 68 submissions. Materials are presented in English and Ukrainian.

CIES-2021 Conference proceedings is intended for professionals and researchers in scientific fields: Education, Psychology, and Health Care Science.

The Conference proceedings provides immediate Open Access to its content on the principle that making research freely available to the public supports a greater global exchange of knowledge. All papers apply under the terms of the Creative Commons Attribution License (CC BY 4.0).

The Conference proceedings are presented in international scientometric databases, repositories and search engines: Crossref System, Google Scholar, EndNote Click (USA); Scilit (Switzerland), etc.

We thank all Authors and Readers of CIES-2021 Conference proceedings and hope for further cooperation.

Take care of yourself and be healthy!

Conflict of interests:

The authors declare that there is no conflict of interests.

Source of support:

This research did not receive any outside funding or support.

Information about the authors:

Melnyk Yuriy Borysovych – <https://orcid.org/0000-0002-8527-4638>; Doctor of Philosophy in Pedagogy, Associate Professor; Founder and Chairman of the Board, Kharkiv Regional Public Organization “Culture of Health” (KRPOCH); Director, Scientific Research Institute KRPOCH, Kharkiv, Ukraine; Chairman of the CIES-2021 Conference Organizing Committee.

Research interests: education, psychology, psychological technology, culture of health.

Georgieva Lidia Mladenova – <https://orcid.org/0000-0002-9320-9203>; Doctor of Philosophy in Medicine, MD, Professor, Medical University – Sofia, Bulgaria; Member of the CIES-2021 Conference Organizing Committee.

Research interests: social medicine, public health, education.



Cite this article as:

Melnyk, Yu. B., & Georgieva, L. M. (2021). Message from Editors of CIES-2021 Conference proceedings. In Yu. B. Melnyk, & L. M. Georgieva (Eds.), *Current Issues of Education and Science. 9th International Conference, CIES-2021, Riga, Latvia – Kharkiv, Ukraine, November 10–13, 2021, Conference proceedings* (pp. 4–6). KRPOCH. <https://doi.org/10.26697/9786177089147.2021.01>

Copyright information:



The published paper are licensed under a Creative Commons “Attribution” 4.0 Worldwide



The electronic version of this article is complete. Full or partial reproduction of article is allowed, citing to the source, author(s) and DOI. An electronic copy of the Conference proceedings in open access is available via the KRPOCH Publishing website <https://publisher.culturehealth.org>



Current Issues of Education and Science, 2021
Conference proceedings. ISBN: 978-617-7089-14-7
<https://doi.org/10.26697/9786177089147.2021>
EDUCATION



DOI: <https://doi.org/10.26697/9786177089147.2021.02>

The Role of Sports Activities in Students' Academic Achievements in Secondary Education

Iris MANCI¹ 

¹ Alexander Moisiu University, Albania

Corresponding Author Details

Iris MANCI, iris.manci@hotmail.com

Received: 12.10.2021; Accepted: 09.11.2021; Published: 17.12.2021

Brief Summary

Background: Physical education is an integral part of the educational process, without which the child's education would be incomplete, but at the same time an area which differs from other curricular areas, as its primary focus is on the body, physical experiences and human health.

The aim of the study: To define the role of sports activities in students' academic achievements in secondary education.

Methods: The research is based on qualitative scientific research, which helps us to achieve new results and knowledge. Based on the direct observation at school to see the impact of sports activity on students' academic achievement 100 secondary school students in several different schools in the city of Durrës were interviewed.

Results: The results of this study highlight the importance of the role of sports activities in school settings that take place at different times. Students have expressed that they get high results in lessons in subjects such as mathematics, reading, etc.; in improving academic performance; in concentration, beneficial effects on the processes of attention, memory, improving executive function and brain activation, and their behavior in the classroom.

Conclusions: Physical education plays an important role in promoting healthy behaviors. Students in physical education, compared to



those who are not in physical education, are more physically active, eat more fruit, and watch less television. From a social point of view, students say that they cooperate more with their peers.

Keywords:

sport, education, student, teacher, academic achievements.

Background:

Research shows that physical activity – whether it’s team sports, bike riding, swimming at the beach or playground games – has positive effects on the brain and on school performance. Physical activity has an impact on cognitive skills such as concentration and attention, and it also enhances classroom attitudes and behaviors, all of which are important components of improved academic performance. Children participating in the study were given electroencephalograms (EEGs) to measure brain waves and how fast the brain responds to certain stimuli. There is an extensive literature concerning the effect of single bouts of physical activity on cognitive function in young people and some studies examining the longitudinal (or chronic) impact of undertaking extra physical activity over or example a few months on cognitive function.

It is important to include such information in this review as each physical education lesson or sport activity represents a bout of physical activity which might impact on learning on that day and indeed over a period of time. Cognitive function is often examined using computer tests and may include tests of memory, attention, perceptual skills and occasionally in longitudinal, studies IQ tests. Researchers found that the brain synapses of physically fit children fired faster and stronger, and as a result those children had better language skills. The more physically fit children were not only better at reading, but they were also better at reading passages with several grammatical errors.

The researchers looked at the brainwave patterns that deal with language and the ability to spot errors in grammar. The fit children had strong results with both brain wave groups and a better understanding of nonsensical or error-filled sentences. Another study also found positive associations between physical activity, fitness, cognitive function and academic achievement. The evidence indicated that physical activity has a relationship to parts of the brain that support complex cognitive processes during laboratory tasks. It also showed that physical activity is important for growth, development and general health.

The aim of the study. To define the role of sports activities in students’ academic achievements in secondary education.



Methods:

This research is based on qualitative scientific research, which helps us to achieve new results and knowledge. Based on the direct observation that made at school to see the impact of sports activity on students' academic achievement and 100 secondary school students in several different schools in the city of Durres were interviewed. These methods adapted to the aims of this study. Various literature was also analyzed to create a theoretical framework regarding the importance and impact that sport has on its apparently high academic student activities.

Results:

Physical and sports education, like any other discipline, affects shaping the personality of young people, enabling them to actively participate in social activities in enriching and deepening general and specific knowledge, which enable them to become responsible, open, capable citizens to integrate in a democratic society. Through physical, sports and artistic activities we form cultured, independent citizens, who know how to control their physical development during schooling and throughout life, to regulate social relations, to be active actors and critics of what happens to them and about tire.

Through physical and sports activities students of this age gain new technical and tactical knowledge from a certain branch of sports, adapt in new specific situations and gain new experiences, making efforts to find better choices in specific physical activity situations. The knowledge gained through physical activities enables students to know how to behave within the group, to know and use the rules of behavior, but also to design those rules that they will respect. They will also express their organizational skills, as they will organize competitions, will judge them, while experiencing many emotions as participants in those competitions.

A review of the literature revealed that the key health benefits of sport on young people could be grouped into the physical and mental categories of health. Although the enhanced emotional wellbeing of young athletes was mentioned, there were no specific benefits noted in relation to this. Moreover, there does not appear to be literature concerning the link between sport and spiritual health. Further research regarding the social benefits of sports participation however did indicate that there is existing literature available which examines the relationship between the two variables. This centers around the facilitation of social inclusion (Collins, 2003). That is, sport is seen to provide an opportunity for individuals from different backgrounds to meet, communicate and thus develop social networks and unite communities (Bailey, 2004).



Children's engagement in sports is known to contribute to outcomes to create a way of life for children, that children are for physical, social and cognitive abilities (Choi et al., 2014). More broadly, involved in physical activity is also known to contribute to a range of positive outcomes, importance; physical and mental health, social well-being, cognitive and academic performance (Bailey et al., 2013). For young people to have such results, it is accepted that physical education (PE) in schools is an ideal tool to promote physical activity because of its availability to all young people. While teachers also have the opportunity to integrate this process into education in general (Telford et al., 2012).

Self-determination theory suggests that the affective field (psychological need) is critical to students' growth, development, and well-being; in sports activity, students have the opportunity to experience autonomy and competence, components of learning that lead to increased self-efficacy and successful self-management (Shen et al., 2009). High-intensity sports activity significantly improves adolescents' non-verbal and non-verbal ability, abstract reasoning, spatial ability, and numerical ability (Arday et al., 2013). Sports activity increases the ability to manage time in completing classroom tasks (Fisher et al., 2011; Mahar et al., 2006). Academic performance improves when more time is spent on sports activities (Sallis et al., 1999; Shephard, 1997). Daily sports activity can enhance various cognitive abilities, such as fluid intelligence and perceptual speed of children in grade 2 through 8 (Reed et al., 2013).

There is a wealth of literature to suggest that physical activity is significantly related to increased self-esteem and speculated "knock-on" effects of this are benefits in all aspects of school life, including improved classroom behavior and academic performance (Shephard, 1996). The influence of physical activity on self-esteem may be influenced by the activity mode undertaken, although positive cognitive behavioral modifications have been observed across aerobics, strength, dance, and flexibility activities (Strong et al., 2005). One recent well-controlled study has shown improvements in self-esteem following running activities in girls (DeBate et al., 2009).

It is of particular interest that increased self-esteem is often thought to provide the impetus to participate in physical activity and sport, and that low self-esteem is often a key barrier preventing participation. Thus, development and inclusion orientated interventions shown to increase self-esteem could be the trigger for increasing youth engagement in physical activity. Conducting such interventions in schools means that little effort is required for pupils to become involved (compared to specialist, out of school clubs), and could provide the catalyst for the cyclical trend of



increased self-esteem leading to increased participation. Further longitudinal research is required to firmly establish this concept however, as cross-sectional studies which observe high-exercise groups with lower levels of depression and high self-esteem cannot ascertain the direction of such a relationship (Field et al., 2001; Tremblay et al., 2000).

Behavior is a form of communication which is often the only way they know to communicate a desire or need. Determining the reason or cause of the behavior is a key factor in understanding the behavior and what it is trying to communicate. Children with disabilities need to learn skills that will help them reduce stress, irritability, improve communication skills, and develop new behaviors. During sports activity four psychological needs are also met that promote motivation, as Glasser says.

These four needs are: the need for belonging; the need for power; the need for freedom and independence as well as the need for pleasure.

Thus, allowing these children to work in groups, in pairs, or individually during this activity, practically meets their need. They feel free there, they feel emotionally fulfilled and motivated. They also fulfill a need which is freedom of action, there they discharge a lot of energy.

Taras (2005) reviewed literature investigating the association between physical activity and academic outcomes among school-aged children. It was recognized that physical activity is well associated with improved overall health and that among school-aged children it can help develop social skills, improve mental health, and reduce risk-taking behaviors. It was concluded that there may be some short-term benefits of physical activity, such as concentration. The long-term improvement on academic performance is a result of more vigorous physical activity but further research is needed in this area. Trudeau and Shephard (2008) reviewed the literature on the relationship between PE, school physical activity and school sports on academic performance. They concluded that physical activity can be added to the school curriculum by taking time from other subjects without the risk of hindering student's academic achievement. Further conclusions were made stating the literature strongly suggests that academic achievement, physical fitness and health of children will not be improved by limiting the time allocated to PE instruction, school physical activity and sports programmes. It was also reported that cross-sectional studies generally indicate a positive association between physical activity and academic achievement.

The results of this study highlight the importance of the role of sports activities in school settings that take place at different times. Students have expressed that they get high results in lessons in subjects such as mathematics, reading, etc.; in improving academic performance; in



concentration, beneficial effects on the processes of attention, memory, improving executive function and brain activation, and their behavior in the classroom. Physical education plays an important role in promoting healthy behaviors. Students in physical education, compared to those who are not in physical education, are more physically active, eat more fruit, and watch less television (Tassatano et al., 2010). From a social point of view, students say that they cooperate more with their peers. Many studies point out that sports activity further promotes a child's personality; creates solidarity and socialization; teaches children to set goals and how to deal with problems.

A review by Choi et al. (2014) addresses this gap in the literature, recognizing the wide range of positive outcomes that exposure to sports competition can have on children early in life (behavioral, physical and psychosocial). Most notably, through competition children are provided with excellent opportunities to build their skills, develop their social adjustment; integration and emotional growth. Competition is also thought to contribute to children's ability to work with others in the achievement of shared goals. When it comes to long-term success, competition helps children be better prepared for the challenges they will face in the future, whilst helping them to learn effective emotional and psychological skills and strategies to deal with winning and losing, as well as success and failure (Choi et al., 2014).

The results of this study reiterate the importance and necessity of conducting sports activities in the school, leading to some recommendations for physical education teachers as a key player in this process of student education.

Conclusions:

Sports activity has an impact on the student: sports activity is related to the measures of the executive function of the brain; sports activity results in the development of higher processes of storing information in memory; sports activity reduces problematic behaviors in the classroom; children who engage in sports activities receive higher grades in school; sports activity has beneficial effects on attention processes in students in the classroom; sports activity affects concentration, memory and classroom behavior; adolescent sports activity in leisure time is associated with greater cognitive performance; high-intensity sports activity significantly improves adolescents' non-verbal and non-verbal ability, abstract reasoning, spatial ability, and numerical ability; high school students have higher grade point average during semesters when dealing with sports compared to those who do not engage in sports; sports activity increases the possibility of time management in carrying out classroom tasks; daily sports activity can



enhance various cognitive abilities, such as fluid intelligence and children's perceptual speed.

Conflicts of interests:

The author declares that there is no conflict of interests.

Source of support:

This research did not receive any outside funding or support.

References

- Arday, D. N., Artero, E. G., Ruiz, J. R., Labayen, I., Sjöström, M., Castillo, M. J., & Ortega, F. B. (2013). Effects on adolescents' lipid profile of a fitness-enhancing intervention in the school setting; the EDUFIT study. *Nutricion hospitalaria*, 28(1), 119–126. <https://doi.org/10.3305/nh.2013.28.1.6146>
- Bailey, R. P. (2004). Evaluating the relationship between physical education, sport and social inclusion. *Educational Review*, 56(3), 71–90. <https://doi.org/10.1080/0013191042000274196>
- Bailey, R., Hillman, C., Arent, S., & Petitpas, A. (2013). Physical activity: An underestimated investment in human capital? *Journal of Physical Activity & Health*, 10(3), 289–308. <https://doi.org/10.1123/jpah.10.3.289>
- Choi, H. S., Johnson, B., & Kim, Y. K. (2014). Children's development through sports competition: derivative, adjustive, generative, and maladaptive approaches. *Quest*, 66(2), 191–202. <https://doi.org/10.1080/00336297.2013.861757>
- Collins, M. (2003). Constraints on and benefits of playing sport. In M. Collins & T. Kay (Eds.), *Sport and Social Exclusion* (pp. 24–33). Routledge. <https://doi.org/10.4324/9780203167267>
- DeBate, R. D., Gabriel, K. P., Zwald, M., Huberty, J., & Zhang, Y. (2009). Changes in psychosocial factors and physical activity frequency among third- to eighthgrade girls who participated in a developmentally focused youth sport program: a preliminary study. *Journal of School Health*, 79(10), 474–484. <https://doi.org/10.1111/j.1746-1561.2009.00437.x>
- Field, T., Diego, M., & Sanders, C. E. (2001). Exercise is positively related to adolescents' relationships and academics. *Adolescence*, 36(141), 105–110. <https://pubmed.ncbi.nlm.nih.gov/11407627/>



- Fisher, A., Boyle, J., Paton, J., Tomporowski, P., Watson, C., McColl, J. H., & Reilly, J. J. (2011). Effects of a physical education intervention on cognitive function in young children: randomized controlled pilot study. *BMC Pediatrics*, *11*, 97. <https://doi.org/10.1186/1471-2431-11-97>
- Mahar, M. T., Murphy, S. K., Rowe, D. A., Golden, J., Shields, A. T., & Raedeke, T. D. (2006). Effects of a classroom-based program on physical activity and on-task behavior. *Medicine and Science in Sports and Exercise*, *38*(12), 2086–2094. <https://doi.org/10.1249/01.mss.0000235359.16685.a3>
- Reed, J. A., Maslow, A. L., Long, S., & Hughey, M. (2013). Examining the impact of 45 minutes of daily physical education on cognitive ability, fitness performance, and body composition of African American youth. *Journal of Physical Activity & Health*, *10*(2), 185–197. <https://doi.org/10.1123/jpah.10.2.185>
- Sallis, J. F., McKenzie, T. L., Kolody, B., Lewis, M., Marshall, S., & Rosengard, P. (1999). Effects of health-related physical education on academic achievement: Project SPARK. *Research Quarterly for Exercise and Sport*, *70*(2), 127–134. <https://doi.org/10.1080/02701367.1999.10608030>
- Shephard, R. J. (1997). *Aging, physical activity, and health*. Human Kinetics Publisher.
- Shephard, R. J. (1996). Habitual physical activity and academic performance. *Nutrition Reviews*, *54*(4), S32–S36. <https://doi.org/10.1111/j.1753-4887.1996.tb03896.x>
- Strong, W. B., Malina, R. M., Blimkie, C. J., Daniels, S. R., Dishman, R. K., Gutin, B., Hergenroeder, A. C., Must, A., Nixon, P. A., Pivarnik, J. M., Rowland, T., Trost, S. & Trudeau, F. (2005). Evidence based physical activity for school-age youth. *The Journal of Pediatrics*, *146*(6), 732–737. <https://doi.org/10.1016/j.jpeds.2005.01.055>
- Taras, H. (2005). Physical activity and student performance at school. *Journal of School Health*, *75*(6), 214–218. <https://doi.org/10.1111/j.1746-1561.2005.00026.x>
- Tassatano, R. M., Barros, M. V. G., Tenorio, M. C. M., Bearra, J., Florindo, A. A., & Reis, R. S. (2010). Enrollment in physical



- education is associated with health-related behavior among high school student. *Journal of School Health*, 80, 126–133. <https://doi.org/10.1111/j.1746-1561.2009.00476.x>
- Telford, R. D., Cunningham, R. B., Fitzgerald, R., Olive, L. S., Prosser, L., Jiang, X., & Telford, R. M. (2012). Physical education, obesity, and academic achievement: A 2-year longitudinal investigation of Australian elementary school children. *American Journal of Public Health*, 102(2), 368–374. <https://doi.org/10.2105/AJPH.2011.300220>
- Tremblay, M., Inman, J. & Willms, J. (2000). The relationship between physical activity, self-esteem, and academic achievement in 12-year-old children. *Pediatric Exercise Science*, 12(3), 312–323. <https://doi.org/10.1123/pes.12.3.312>
- Trudeau, F., & Shephard, R. J. (2008). Physical education, school physical activity, school sports and academic performance. *International Journal of Behavioral Nutrition and Physical Activity*, 5, 10. <https://doi.org/10.1186/1479-5868-5-10>

Information about the author:

Manci Iris – <https://orcid.org/0000-0003-4914-3945>; Teacher of the Department of Psychology, Alexander Moisiu University, Durres, Albania. *Research interests:* education, sports activity, bullying.

Cite this article as:

Manci, I. (2021). The role of sports activities in students' academic achievements in secondary education. In Yu. B. Melnyk, & L. M. Georgieva (Eds.), *Current Issues of Education and Science. 9th International Conference, CIES-2021, Riga, Latvia – Kharkiv, Ukraine, November 10–13, 2021, Conference proceedings* (pp. 7–15). KRPOCH. <https://doi.org/10.26697/9786177089147.2021.02>

Copyright information:



The published paper are licensed under a Creative Commons “Attribution” 4.0 Worldwide



The electronic version of this article is complete. Full or partial reproduction of article is allowed, citing to the source, author(s) and DOI. An electronic copy of the Conference proceedings in open access is available via the KRPOCH Publishing website <https://publisher.culturehealth.org>



Current Issues of Education and Science, 2021
Conference proceedings. ISBN: 978-617-7089-14-7
<https://doi.org/10.26697/9786177089147.2021>
EDUCATION



DOI: <https://doi.org/10.26697/9786177089147.2021.03>

Modern Features and Trends in the Development of the Architectural Education System

Larysa S. MARTYSHOVA¹ 

¹ O. M. Beketov National University of Urban Economy in Kharkiv, Ukraine

Corresponding Author Details

Larysa S. MARTYSHOVA, larymarkaz@gmail.com

Received: 01.10.2021; Accepted: 29.10.2021; Published: 17.12.2021

Brief Summary

Background: Introduction discusses the core global contemporary transformations that embrace all the areas from creating material world objects to the processes of environmental changes overall. These processes involve all the aspects of human life: philosophy, methodology, culture, science, education etc.

The aim of the study: To find the contemporary features of training architects and the trends in architectural creativity development, as well as to establish their interaction with the development of the current approaches in architectural education, under the conditions of changeable socioeconomic requirements and technological capacities.

Methods: The research methods are determined by those modern architecture is focused on, namely, the system worldview, model thinking, ability to generalize and manage. Methodological and theoretical bases of the study are the general scientific approaches and principles of dialectical development; system and interdisciplinary approach.

Results: The research outcomes show that the potential of contemporary architectural creativity as an interdisciplinary area is based on the holistic perception of the environment (with its uniqueness, originality and specificity) and, in turn, on the complete architectural education and architect's talent.



Conclusions: *The conclusion identifies the main contemporary features and trends in the development of the architectural education system: the role of the educational structure in the system of architectural education and the architectural creativity practice is built on such grounds as the continuity of cultural values, modernization of educational processes, keeping national traditions, learning international trends; the interdisciplinary approach becomes the key instrument and method in the architectural creativity and education; the architecture relies equally on engineering and humanitarian aspects.*

Keywords:

architecture, architect, architectural education, architectural creativity, environment, integrity, interdisciplinary.

Background:

In today's unified world there is an issue of developing creative abilities and creative potential of a personality at all educational cycles (from pre-schooling to higher education). Therewith, the fundamental changes in the long-standing customs and traditions lead to the emergence of a new epoch, new civilization, and, naturally, to the establishment of the new criteria of architectural education. Still, universal and timeless values and human psychology are to be kept, since they serve as the basis and reality of architect's life and creativity (Czyikov, 2008). Overall, creativity, regarded as making unique tangible and intangible values, is not subject to a well-established scheme or an algorithm. People always admire the creativity of the great masters but even the most prominent figures cannot reproduce their creative works accurately, because the creative process is similar to the river flowing, where every moment is unique and different from the others.

Architectural education is a special branch of education that aims to train and shape an architect, who creates a new environment aesthetically and skillfully. An architect is then not a merely thinking qualified specialist but an integral, harmonious type of personality capable of seeing and perceiving as well as of creating the environment as a unified whole of interrelated elements, and even of foreseeing the development of this whole – the multifaceted world of human activity. The environment is not just the habitat (place of functioning) for a person, but an artwork, which is distinct and original from the natural, cultural and socio-historical perspectives. In architect's view, the environment is the integrity, an organized space that continuously surrounds a person, who uses architecture to actively and



permanently influence the common process of shaping this twofold structure. By creating an artificial environment for human life, architecture affects human psyche in different ways, and the biggest impact is through the visual perception, since human activities are always related with various forms of environment perception (Shubovych, 2005).

UNESCO-UIA Charter for Architectural Education states that “Architecture is a discipline which draws knowledge from the humanities, the social and the physical sciences, technology, environmental sciences, the creative arts and the liberal arts. Architectural education is to ensure the following outcomes: the ability to understand the relations between people and architectural facilities, on the one hand, and between the architect and environment on the other. It is also to provide for the ability to correlate architectural facilities and space with the human scale (Unesco-Uia, 2017).

The problem of the architectural creativity development as the means of architectural thinking is essential in architectural education. In modern conditions the sources of creativity increasingly often include knowledge, scientific and technological innovations, and their applications in education. The knowledge of the world cultural and domestic heritage, the ability to creatively combine it with the contemporary architectural art and solve topical complex social space problems serve the grounds for training a personality with new intellectual and creative thinking. A specific feature of the problem is that to solve it, it is necessary to go beyond the existing knowledge. Continuous information updating in science, technologies, innovations, and education enables to consider that this problem is nearly always an open system for researchers, which inevitably leads to searching for the ways to upgrade theoretical models, philosophical approaches, and worldviews in architectural practice and education.

The aim of the study. To identify contemporary features of training architects and the trends in architectural creativity development, as well as to establish their interaction with the development of the current approaches in architectural education, under the conditions of changeable socioeconomic requirements and technological capacities.

Methods:

It is impossible to achieve the above aim without knowing and considering fundamental research in the fields of philosophy, natural sciences, and new technologies, where these problems have been studied by scholars, architects, education theorists and practitioners in general and in particular in architectural education. In this respect, the focus is made on the important role of the direct perception of the environment, which is crucial for shaping architect’s worldview, and also on the artistic architectural



creativity and humanitarian education system, which is an integral part of the fundamental professional education.

Methodological and theoretical bases of the research involve general scientific approaches, which can be applied to architecture and architectural education: the laws and principles of dialectical development; the system approach, determined by the social-cultural architectural concepts; and the interdisciplinary approach, which implies the use of the concepts, models and theories from various areas of theoretical and practical knowledge.

Results:

The theoretical value of the study is in the opportunity to use its provisions and conclusions in creating generalizing research that rely upon the experience of modern architectural creativity, new architectural thinking and further architectural education development based on the integrative processes in science, education, and practice with the active implementation of innovative technologies.

The practical relevance of the study is in confirming the need for the accumulated experience and modern architectural trends, the need for reforms and improvements of architectural education in the new continuously changeable conditions. The results of the research may be used in the development of the new generation educational programs, the choice of the system and methods of education.

The traditional system of architectural education is oriented on specialized professional training, which implies educational process division into the major (specializing) disciplines and minor (humanitarian). This approach to architect training that distinguishes architecture from the system of “nature – architecture – person”, does not provide the holistic concept of architecture, while a person who genetically and instinctively seeks harmony, does not receive the holistic image of the world. As a result, architecture does not reach its main goal – to create the material environment integrity (“second nature”) of the surrounding world (Shubovych, 2005). The significance of the architectural education in the process of the contemporary society and environment development overall determines the possibility of not merely uniting various elements in a single organism but also the opportunities of monitoring and finding connections between generations, reflected in architectural space shapes. Thus, architectural education acts as the information environment, responsible for the development of the architectural context of our cities and the environment on the whole through shaping architect’s creative personality. Currently, in today’s informationally overloaded world, when the production is most often merged with science, and the need to unite the



scientific training and practical experience has been urgent, the architectural profession requires not only numerous art and technical skills, but also understanding of interrelations among the elements of the profession (Rappaport, 1975). Contemporary research in architecture somehow goes beyond the conventional framework and considers an increasingly broader scope of knowledge from economy to poetics.

Architectural creativity is an interdisciplinary field that represents the unique activity, aiming at the active value-based acquisition and understanding of the worldview image, which depends on social, cultural, religious, political, moral, technological, economic and other conditions, thus uniting humanitarian and engineering aspects (Karmazin & Kapustin, 2003). The unique experience of the architectural creativity is gradually accumulated, enriching the arsenal of cultural heritage, traditions and types of creation. That way, the range of professional methods, techniques and means is continuously widening, the worldview is changing, and creative thinking is developing. A special trait of the new epoch is the establishment of the structure of the new type of knowledge, where all the areas of human activities: science, education, production, and business, are integrated in the integrated developing system. The world around us is continuously changing along with the benefits and values, landmarks and attitudes. The contemporary understanding of the matter structure and motion claims that the environment is an integrated system and, consequently, the system approach to world learning and transforming is philosophical, specifying the principles of the general connection.

The state of the sociopolitical system, education level, architect's personal professionalism and general cultural background level determine the overall future of the humanity, nations, states and their economies. The trends of the architectural education system development are expressed in multitasking: seeking to balance the need for fast response to processes, the ability to change when making decisions and the importance of principal positions in the matters of knowledge, society, culture, environment, ethics and esthetics. Architecture and architectural creativity in general are expanding their geography, trying to become universal, losing numerous traditional features and specifics. This trend for internationalization implies both new potential потенциал and new, often unprecedented, challenges. Therefore, the need for protecting and conserving architectural heritage is increasing, demanding the provision by the architectural education of the skills and abilities to navigate in the complicated system of the real world connections. For example, UNESCO-UIA Charter for Architectural Education draws attention to the problem of imperfection and incompliance with the dynamics of the architectural education development with the level



of contemporary international socioeconomic conditions and requirements (Unesco-Uia, 2017).

Architecture has always been reflecting relations between people and the world: with the immediate environment and with the Universe in general, unites the imaginary and functional aspects and is predominantly material and synthesizes seemingly incompatible layers of human culture. Architects have always travelled and sought to work as much as possible in various parts of the world, learning and studying different cultures and traditions, which enormously enriched their worldview and enabled creativity. Owing to the internationalization of education and mobility, the availability of numerous programs and grants, contemporary students and teaching staff have wide opportunities and prospects not only to study but also work or collaborate with prominent experts worldwide. The modern engineering innovations are an excellent tool, especially in the situation of forced isolation (e.g. pandemic), unsurmountable distances or personal factors (e.g., physiological ones). However, for the architectural education it is important to have a tight personal contact with the teacher (mentor), as it has always been. From time immemorial, a person would master the craft, the skills were passed down from person to person, adapting to a specific specialist, therefore, workshops are so highly valued worldwide. The invisible link emerging between a student and a teacher (it includes everything: individuality, intuition, inspiration, courage, passion for the master's personality and willingness to be similar to him, and eventually – the aspiration to be a “master (expert)”) (Martyshova, 2016).

The modern global educational system is undergoing the period of quality reforms and breakthroughs. This field of life is being completely transformed, and it is anthropocentric, i.e. oriented on people and their needs. The approach, oriented on studying natural and general scientific worldview, used to do research into the complex scientific problems was suggested by Vernadskiy (1977). Architectural creativity is social by nature, because contemporary architecture, being a new material environment does not fit the framework of yesterday's criteria, and the society is continuously setting new requirements to both the form (material qualities), and the content (philosophy, spiritual, cultural-esthetic, social and functional meaning) (Vernadskiy, 1977).

The research showed that the potential of the contemporary architectural creativity as an interdisciplinary area is based on the integrity of perceiving the environment (with its inherent uniqueness and originality) and, in turn, on the completeness of architectural education and architect's talent. A considerable impact on the condition and development of architecture is currently made by the dialectical-methodological approach to



the problem of interaction among architectural creative practice, architectural education and science, where the crucial factors were the innovative principles of architectural school education, theories, concepts and creative works by the prominent architects of the early 20th century. The contemporary architectural education is at the stage of selecting the system and model of further development in the conditions that rapidly change, which requires transformations in the educational system. For example, over the period of the first two decades of the 21st century, along with the contemporary trends for the active introduction of scientific and technological developments in all areas of human life, including the practice of architectural creativity, architectural education is lagging behind: relations of the science and practice are being lost and, which is especially important, interdisciplinary links are being lost, though they promote integrated perception, preservation and creation of the environmental integrity.

Conclusions:

Modern trends in architects' training within the architectural educational system area characterized by the need of the active practical use of the achievements of fundamental and applied sciences, engineering, innovative technologies, cultural development, which, in turn, turn the image of the architecture as a system of fragmented knowledge (elements) into the aspiration to establish integrated environmental knowledge.

The new era in the practice of developing contemporary trends in training architects within the architectural education system has been formed by a number of factors: cultural-historical heritage of architectural schools of the early 20th century and the emergence of new architectural schools, creative associations, training architects, builders, designers and artists. Thus, the modern architectural education is in the sociocultural conditions, which are changing dynamically, and in the process of seeking essential creative trends. The process is based on two main areas: vocational education and humanitarian education.

Along with global quality changes, the contexts and theories, related to national and regional interests are being activated and confirmed as well; the value-based criteria of the national traditions in architectural creativity and education are identified. The observed reflection of international features in national cultures is based on the principles, on the one hand, mutual enrichment and development, on the other – universalization.

According to the modern international requirements and conditions, the role of the educational structure (as the unified model of education-science-practice) in solving the problems of continuity, consistency, and



succession in the architectural education system and practice, built on the principles of passing down cultural values, modernization of educational processes, keeping national traditions, learning international trends, has gained significance. While the interdisciplinary approach is becoming an essential tool and method in the practice of architectural creativity and education.

Conflicts of interests:

The author declares that there is no conflict of interests.

Source of support:

This research did not receive any outside funding or support.

References

- Czyikow, S. S. (2008). Arhitectura buduschego: osmyslenie i model razvitiya [Architecture of the future: comprehension and model of the development]. *Arhitecton: Izvestiya vuzov – Architect: News of Higher Educational Institutions*, 2(22). https://archvuz.ru/2008_2/7 [in Russian]
- Karmazin, Yu. I., & Kapustin, P. V. (2003). Gumanizatsiya arhitekturnoy deyatel'nosti i gumanitarnoye sodержaniye professional'nogo obrazovaniya [Architectural activity humanisation and humanitarian content of professional education]. *Izvestiya vysshih uchebnykh zavedeniy: Stroitel'stvo – Bulletin of higher educational institutions: Construction*, 7, 119–125. <https://izvuzstr.sibstrin.ru/uploads/publication/fulltext/7-2003.pdf> [in Russian]
- Martyshova, L. S. (2016, April 28-29). *Gumanitarnaya sostavlyayushchaya podgotovki arhitekтора [The humanitarian component of the architects training]* [Poster presentation]. Modern Problems of Youth Education in Higher Education, Kharkiv, Ukraine. <https://eprints.kname.edu.ua/44963/> [in Russian]
- Rappaport, A. G. (1975). Proektirovanie bez prototipov [Design without prototypes]. *Razrabotka i vnedrenie avtomatizirovannykh sistem v proektirovanii (teoriya i metodologiya) [Development and implementation of automated systems in design (theory and methodology)]*. https://www.priss-laboratory.net.ru/library/library_rappaport_prototype.pdf [in Russian]
- Shubovych, S. A. (Ed.). (2005). *Gumanitarnyy kompleks arhitektury. K voprosu o gumanitarnykh issledovaniyakh v arhitecture [Humanitarian complex of architecture. To the issue of humanitarian researches in architecture]*. XNAGX. [in Russian]



- Vernadskiy, V. I. (1977) *Razmyshleniya natyralista. Nauchnaya mysl kak planetnoe yavlenie*. [Reflections of a naturalist. Scientific thought as a planetary phenomenon].
<http://www.isaran.ru/bookreader/publication.php?guid=BB9E42F9-56DA-7238-BAA8-C9A85D26BAB6&ida=1&kod=9> [in Russian]
- UNESCO-UIA. (2017). *Charter for architectural education*. (Ed. 2014-2017).
<https://www.uia-architectes.org/webApi/uploads/ressourcefile/178/charter2017en.pdf>

Information about the author:

Martyshova Larysa Serhiivna – <https://orcid.org/0000-0002-2211-3562>;
PhD in Architecture, Associate Professor of Urban Planning Department,
O. M. Beketov National University of Urban Economy in Kharkiv, Ukraine.
Research interests: information-semantic and landscape-compositional
problems of the architectural environment spatial structure.

Cite this article as:

Martyshova, L. S. (2021). Modern features and trends in the development of the architectural education system. In Yu. B. Melnyk, & L. M. Georgieva (Eds.), *Current Issues of Education and Science. 9th International Conference, CIES-2021, Riga, Latvia – Kharkiv, Ukraine, November 10–13, 2021, Conference proceedings* (pp. 16–24). KRPOCH.
<https://doi.org/10.26697/9786177089147.2021.03>

Copyright information:



The published paper are licensed under a Creative Commons “Attribution” 4.0 Worldwide



The electronic version of this article is complete. Full or partial reproduction of article is allowed, citing to the source, author(s) and DOI. An electronic copy of the Conference proceedings in open access is available via the KRPOCH Publishing website
<https://publisher.culturehealth.org>



Current Issues of Education and Science, 2021
Conference proceedings. ISBN: 978-617-7089-14-7
<https://doi.org/10.26697/9786177089147.2021>
EDUCATION



DOI: <https://doi.org/10.26697/9786177089147.2021.04>

Integration Technology in Math Lessons

Senad ORHANI¹ 

¹ University of Prishtina, Prishtina

Corresponding Author Details

Senad ORHANI, senad.orhani@uni-pr.edu

Received: 15.10.2021; Accepted: 10.11.2021; Published: 17.12.2021

Brief Summary

Background: Teaching and learning in today's classrooms are transforming to meet the changing demands of the society. One of the biggest changes experienced by teachers and students is the introduction of technology-based tools to aid teaching and learning. Mathematics enables the development of students' skills and abilities to think critically, the development of their personality, the development of skills to work independently and systematically, the stimulation of curiosity and encouragement for discovery, the building of knowledge new in order to implement and integrate them in other areas and solve problem situations in everyday life.

The aim of the study: To present the effective experiences of integrating technological tools in the teaching and learning of concepts in lessons in the subject of mathematics

Methods: The empirical method was used for this study, with quantitative approach. The sample for this study is represented by the teachers and students of the lower secondary school, with 40 participants. Quantitative data were collected from the answers of the participants in the questionnaire.

Results: The findings of the study reflect the high scores of the participants regarding the integration of technology in math lessons, and that this is becoming more prominent in online learning perhaps even in the development of distance learning during the COVID-19 pandemic period.



Conclusions: *The information from the study can be used to support other teachers who are not yet integrating technology into the learning process. But it is important to note that technology is only a teaching tool. No form of technology in the subject of mathematics can ever replace a very effective teacher.*

Keywords:

learning, math, students, teaching and technology.

Background:

The world is changing rapidly in parallel with science revolutions and the evolution of technology. The challenge of accelerating change in the field of education in the 21st century is to find and develop tools that can make teaching and learning effective and worthwhile. Technology has an impact and change in efficiency as a tool that can change the way the subject is taught in teaching practice, which facilitates the learning process as a tool for collecting, organizing and evaluating information in problem solving and to innovate practical ideas. in the reality of life.

As a result, the integration of technology in this study refers to the use of technology in the teaching process in the field of mathematics, which can contribute positively to the performance of students and teachers. Technology integration is also linked to a range of dynamic factors, including effective practices, technological aspects of new tools, the potential to transform learning, the development of online learning, the use of digital learning tools, and the enabling of new forms of practice of teaching and learning. The role of technology in mathematics is one of the key factors in motivating and engaging students for lessons. Technology helps develop learning activities by providing an interactive environment where students examine and visualize exercise presentations and dynamically relate to symbolic expressions, numerical and graphical data.

The application of new technology in the teaching and learning of mathematics is a reform of the 21st century. In this new reality it is necessary to seek new teaching methodologies and teachers need differentiated and sustainable educational tools with the reality in which students are facing. Schools need to keep pace with the times, harnessing the full potential of each student and thus improving the act of teaching and learning in step with technological advances. However, new technologies such as smart boards, computers and iPads have become part of educational systems and cannot now be ignored.



Mathematics is a subject that requires a multifaceted approach and technology offers an opportunity for the student to learn mathematics in a variety of ways. The programs are convenient to use and this provides an opportunity to create a host of different representations within the school's limited daily time. Technology offers the opportunity to present a variety of representations and multiple opportunities to learn in different ways, ensuring that many students become active. These multiple representations can add depth to students' understanding of the concept, which is important as we have seen that students struggle with approaches because there is often an emphasis on a procedural meaning rather than a conceptual meaning (Mudaly & Fletcher, 2019).

The use of technology, and especially mobile technologies, in the teaching and learning of mathematics is gaining increasing interest among researchers and practitioners (Borba et al., 2017). According to Zengin and Tatar (2017) technology within the classroom is not a tool to transfer knowledge, but rather a tool that offers students an opportunity to engage and build their knowledge.

Technology-based tools for the subject of mathematics include specific technology-based tools and technology-based tools for general purposes. Technologies based tools on specific I mathematics include mathematical software, web resources, and other web sites that focus on teaching and learning mathematics subjects. General purpose technology-based tools include productivity software, interactive whiteboards, and general software that suggest that in math classes both can be used to teach math effectively (Mlilo, 2019).

GeoGebra is a dynamic math software for teaching and learning math. You can use it for active and problem-oriented teaching, it encourages experiments and mathematical discoveries both in the classroom and at home. GeoGebra is used to visualize geometric objects that will be transformed. Through the process of visualization students try, reason and finally find the concept of transformation. Based on this, learning using GeoGebra software can improve math skills (Simbolon & Siahaan, 2020).

Mathway is a popular app for students and teachers, as it not only helps students see the answers to difficult problems, but shows them the steps to find the answer. This can be especially helpful for students who are learning at home, for those who do not have access to a teacher, or even for adults who simply want to control their math (Tucker, 2020).

E-learning is a structured field or electronically provided learning experience, which is developed through electronic media, usually including the Internet. We distinguish two types of e-learning, that of synchronous and asynchronous e-learning. Synchronous e-learning, most often referred



to as direct online training, online learning or virtual classroom training, which is led by teachers and takes place at the same time as other students, all occur to be geographically dispersed. Alternatively, asynchronous e-learning may include pre-recorded lecture and video content, visuals and/or text, knowledge quizzes, simulations, games and other interactive elements (Bonderud, 2020).

Google Classroom as learning aids digital tools like Google Classroom, enable teachers to create and organize assignments, tests, provide feedback, and easily communicate with their virtual classrooms. Google Classroom is an online service developed by Google to support teaching and learning in virtual classrooms. Math teachers can create, distribute, and assign tasks to anyone within the group. Each class creates a separate folder in Google Drive of the respective user, where the student can submit the work to be evaluated by a teacher (Edwards, 2021).

Google Meet can empower you to enrich teaching and learning with advanced features like breakout rooms, live streaming, attendance tracking, Q&A, polling and more when you sign up for the Teaching and Learning Upgrade. Google Meet is a video conferencing program from Google Suite to allow teachers to continue to meet the needs of their students through direct math instruction. Math teachers can share their screens to show visuals and model problem-solving strategies (Sapp, 2020).

M-learning has the potential to become an integral part of the teaching and learning processes in the subject of mathematics, which is increasingly common for students to use mobile technology. M-learning technologies include laptops, notebooks, smartphones and tablets. M-learning focuses on student mobility, interacting with portable technologies. Using mobile tools to create teaching tools and materials that have become an important part of non-formal learning. Mobile learning has managed to increase the efficiency of e-learning by taking it one step further and allowing students to learn almost anywhere and anytime (Semertzidis, 2013).

Game Based Learning balances the subject with the game. The goal is to allow students to recall information gained from the game and apply it to real-world life situations. When applied with the right curriculum, game-based learning can help them learn a subject more effectively. Game-based learning is where game features and principles are incorporated into learning activities. Here, learning activities foster student engagement and motivation to learn. Games work best when paired with effective pedagogy. As such, researchers suggest that games will not replace teachers and classrooms, but they may replace some textbooks and labs (Schenke et al., 2014).



Mathematics is a basic skill in many aspects of a student's life. Most students sometimes lack motivation in math lessons. On the other hand, the impact on social life promoted by technology represents a unique opportunity for the development of the learning process, as it facilitates and provides meaningful learning through technological resources.

The aim of the study. To present the effective experiences of integrating technological tools in the teaching and learning of concepts in the lessons of mathematics.

Methods:

The empirical method was used for this study, to investigate how many teachers and students are integrating technological tools into the math lessons. The quantitative approach was used to analyze this study in more detail. The quantitative approach of this study aims to reveal trends regarding the frequency of use of technological tools in the teaching and learning process.

The sample for this study is represented by the teachers and students of the lower secondary school "Heronjtë e Lumës" from the village of Vërmica, municipality of Prizren. The selected sample is a non-probabilistic sample with 40 participants, which was a deliberate sample, due to the evaluation of the use of technology in the learning process.

Quantitative data were collected from the answers of the participants in the questionnaire. Questionnaires were compiled on the Likert scale, which were measuring instruments that reflected quantitative data. Participants' responses were assessed for ideas, values, opinions or attitudes whether they agree or disagree with the statements made. Quantitative data collected from the questionnaire were then analyzed through the SPSS program, where the data collected from the questionnaires were transcribed, categorized and finally interpreted.

Results:

Quantitative data obtained from the questionnaires show a comprehensive understanding of participants' attitudes regarding the integration of technology in mathematics lessons. This study included 40 participants, of whom 37 were students and 3 teachers from primary and lower secondary schools in this country.

According to the results, one third of teachers had knowledge of low level of technology use, while two thirds had high level of technology use. Based on this, the research results show that about 66.7% of teachers are in favor of integrating technology in math lessons, while 33.3% are reluctant to integrate technology in the teaching process. Also, the results of the teachers show that all participants use the GeoGebra program and online



learning (e-learning), 33.3% of the application Mathway, m-learning and Game Based Learning, as well as 66.7% of participants use the Google Classroom and Google Meet platforms.

On the other hand, the study results show that about 29.7% of students had low level knowledge of technology use, 43.2% medium level knowledge, and 27.1% had high level knowledge of technology use. Also, in terms of integration of technology in mathematics learning, the results show that 43.2% use the GeoGebra program, 13.5% use the Mathway application, 100% are involved in online learning, 67.6% use the Google Classroom platform, 59.5% use the Google Meet platform, 18.9 % mobile learning (m-learning) and only 13.5% of students had integrated digital games into mathematics learning.

Therefore, from the results of the research we see that almost all participants have integrated some form of technology in the teaching process of the subject of mathematics. The findings of the study reflect the high scores of the participants regarding the integration of technology in math lessons, and that this is becoming more prominent in online learning perhaps even in the development of distance learning during the COVID-19 pandemic period. Furthermore, we consider the possibility of incorporating technology into math lessons, where technology can improve the teaching and learning process.

Conclusions:

It was important to identify the technology-based tools currently used in math classes in order to exchange information with teachers for planning purposes. Information from the study can be used to support other teachers who are not yet integrating technology into the learning process. Furthermore, it will help students become more involved in their learning and take an active part in their education. But it is important to note that technology is only a teaching tool. No form of technology in the subject of mathematics can ever replace a very effective teacher. The bottom line is that effective teaching is about engaging students in order to help students develop a deeper understanding of mathematical concepts. Effective math teachers use technology as a tool to support engagement and learning, but not as an end in itself. Regarding curriculum issues, it is necessary to develop and apply teaching and learning methodologies to master the resources made available by technology, in order to use them as auxiliary resources to support the understanding of mathematical concepts and motivation students in the classroom.

Conflicts of interests:

The author declares that there is no conflict of interests.



Source of support:

This research did not receive any outside funding or support.

References

- Bonderud, D. (2020, February 27). *How e-learning supports on-demand instruction for K-12 schools*. EdTech. <https://edtechmagazine.com/k12/article/2020/02/how-e-learning-supports-demand-instruction-k-12-schools-perfcon>
- Borba, M., Askar, P., Engelbrecht, J., Gadanidi, G., Llinares, S., & Aguila, M. (2017). Digital technology in mathematics education: Research over the last decade. In G. Kaiser (Ed.), *Proceedings of the 13th International Congress on Mathematical Education* (pp. 221–233). Springer. https://doi.org/10.1007/978-3-319-62597-3_14
- Edwards, L. (2021, March 19). *What is Google Classroom?* Teach & Learning. <https://www.techlearning.com/features/what-is-google-classroom>
- Mlilo, T. (2019). *Exploring the integration of technology – based tools in intermediate mathematics classrooms* [Master's thesis]. University of KwaZulu-Natal. https://researchspace.ukzn.ac.za/xmlui/bitstream/handle/10413/19133/Mlilo_Thobekile_2019.pdf?sequence=1&isAllowed=y
- Mudaly, V., & Fletcher, T. (2019). The effectiveness of GeoGebra when teaching linear functions using the iPad. *Problems of Education in the 21st Century*, 77(1), 55–81. <https://doi.org/10.33225/pec/19.77.55>
- Sapp, T. (2020). *Using Google classroom to teach mathematics in grades 3-5*. Middle Georgia State University. https://www.gctm.org/resources/Reflections/issues/winter2021/PDFs/W21/6_Tyler_Sapp_Using%20Google%20Classroom%20to%20teach%20Mathematics%20in%20Grade%203-5.pdf
- Schenke, K., Rutherford, T., & Farkas, G. (2014). Alignment of game design features and state mathematics standards: Do results reflect intentions? *Computers & Education*, 76(July), 215–224. <https://doi.org/10.1016/j.compedu.2014.03.019>
- Semertzidis, K. (2013). *Mobile application development to enhance higher education lectures* [Master's thesis]. The University of York. <https://www.cs.uoi.gr/~ksemer/docs/theses/msc-ksemer.pdf>
- Simbolon, A., & Siahaan, L. M. (2020). The use of GeoGebra software in improving student's mathematical abilities in learning geometry. In A. Turnip (Ed.), *International Conference on Culture Heritage*,



- Education, Sustainable Tourism, and Innovation Technologies* (pp. 352–360). <https://doi.org/10.5220/0010311803520360>
- Tucker, J. (2020, July 17). *What the tech? App of the day – Mathway*. Nexstar Media Inc. <https://www.texomashomepage.com/news/local-news/what-the-tech-app-of-the-day-mathway/>
- Zengin, Y., & Tatar, E. (2017). Integrating dynamic mathematics software into cooperative learning environments in mathematics. *Journal of Educational Technology & Society*, 20(2), 74–88. <https://www.jstor.org/stable/90002165>

Information about the author:

Orhani Senad – <https://orcid.org/0000-0003-3965-0791>; Graduate Student, University of Prishtina, Prishtina.

Research interests: education, math.

Cite this article as:

Orhani, S. (2021). Integration technology in math lessons. In Yu. B. Melnyk, & L. M. Georgieva (Eds.), *Current Issues of Education and Science. 9th International Conference, CIES-2021, Riga, Latvia – Kharkiv, Ukraine, November 10–13, 2021, Conference proceedings* (pp. 25–32). KRPOCH. <https://doi.org/10.26697/9786177089147.2021.04>

Copyright information:



The published paper are licensed under a Creative Commons “Attribution” 4.0 Worldwide



The electronic version of this article is complete. Full or partial reproduction of article is allowed, citing to the source, author(s) and DOI. An electronic copy of the Conference proceedings in open access is available via the KRPOCH Publishing website <https://publisher.culturehealth.org>



Current Issues of Education and Science, 2021
Conference proceedings. ISBN: 978-617-7089-14-7
<https://doi.org/10.26697/9786177089147.2021>
PSYCHOLOGY



DOI: <https://doi.org/10.26697/9786177089147.2021.05>

Problem Issues of the Psychological Science in the Actual Social Dimension

Valerie M. POLISHCHUK¹

¹ Borys Grinchenko Kyiv University, Ukraine

Corresponding Author Details

Valerie M. POLISHCHUK, valeryipolishchuk@gmail.com

Received: 05.10.2021; Accepted: 02.11.2021; Published: 17.12.2021

Brief Summary

Background: For analyzing the phenomenon of the “Psychological problems” the search strategies of the psychological science (especially for the study of adult psychology, psychology of the elderly) were formulated, characterized and their expected prospects were identified.

The aim of the study: To explore a structural, structural and functional investigation of its psychological content in terms of the favorable and unfavorable social challenges and threats, and later forecasting.

Methods: Priority among organizational methods is longitude; the main ones are experiment, analytical observation and theoretical modelling.

Results: The obtained theoretical and empirical results should be systematized and organized in their semantic hierarchy: 1) methodological guidelines for understanding the phenomenon (examples: selecting the research priorities, formulating the significant topics, constructing the logistics of the research, modelling); 2) basic content (the conscious need for objective knowledge, or scientific discovery, of humans or social communities). The functional essence of the hypothesis (which significance in the scientific works is devalued at present) was described. The search barriers on the way of cognition to the truth (“problem theorizing”, or “bookish education”; “psychology of focusing”; incorrect use of methods



of the mathematical statistics; formulating contemplative generalizations and conclusions) were defined. It was stated that 1) productive research is a complex informational reflection of the meanings of any problem in three historical chronological aspects of the “past – present – future”, 2) modern “current psychological problem issues” suffer the crisis (for example: narrow topics, narrowing the experimental search), 3) modern social demand means the necessity to develop the fundamental and applied technologies for situations of the functional stress, extreme and emergency situations. The importance of the social role of the scientist in researches was shown.

Conclusions: *Disregard for the basic meanings of the phenomenon of the “current psychological problem issues” 1) a priori leading to producing the dogmatic, compiled information, 2) discrediting the scientific psychological knowledge.*

Keywords:

current problem issues, hypothesis, research, longitude research, modelling, phenomenon.

Проблематика психологічної науки в актуальному соціальному вимірі

Валерій М. ПОЛІЩУК¹ 

¹ *Київський університет імені Бориса Грінченка, Україна*

Деталі Автора-Кореспондента:

Валерій М. ПОЛІЩУК valeryipolishchuk@gmail.com

Анотація

Вступ: *Для аналізу феномена «психологічна проблематика» сформульовано, охарактеризовано пошукові стратегії психологічної науки (передовсім для вивчення психології дорослості, психології похилого віку) та визначено їхні очікувані перспективи.*

Мета дослідження: *Структурне, структурно-функціональне вивчення його психологічного змісту в умовах сприятливих і несприятливих соціальних викликів і загроз, потім – прогнозуванні.*

Методи: *Пріоритетними серед організаційних методів пріоритетним є лонгтюд; основні – це експеримент, аналітичне спостереження і теоретичне моделювання.*

Результати: *Отримані теоретико-емпіричні результати повинні бути систематизовані та впорядковані у своїй смисловій*



ієрархії: 1) методологічні настанови для пізнання феномена (приклади: обрання першочергових дослідницьких пріоритетів, формулювання значущої тематики, побудова логістики її дослідження, моделювання); 2) базовий зміст (усвідомлена необхідність об'єктивного пізнання, або наукового відкриття, у людини чи соціальних спільнот). Охарактеризовано функціональну сутність гіпотези, значення якої у наукових роботах зараз знецінене. Визначено пошукові бар'єри на шляху пізнання до істини ("теоретизування проблеми", або "книжкова вченість"; "психологія фокусу"; некоректне використання методів математичної статистики; формулювання споглядальних узагальнень та висновків). Стверджується, що 1) продуктивне дослідження – це комплексне інформаційне відображення смислів будь-якої проблеми у трьох історичних хронологічних площинах "минуле – теперішнє – майбутнє", 2) сучасна «актуальна психологічна проблематика» знаходиться в кризовому стані (приклади: вузька тематика, звуження експериментального пошуку), 3) сучасний соціальний запит – це необхідність розроблення фундаментальних і прикладних технологій для ситуацій функціональної напруженості, екстремальних і надзвичайних ситуацій.. Показано важливість соціальної ролі вченого у дослідженнях.

Висновки: Неврахування базових смислів феномена "актуальна психологічна проблематика" 1) апріорі призводить до продукування догматичної, компілятивної інформації, 2) дискредитує наукове психологічне знання.

Ключові слова:

актуальна проблематика, гіпотеза, дослідження, лонгітюд, моделювання, феномен.

Присвячується 125-річчю
від Дня народження Л. С. Виготського

Вступ:

У ХХІ ст. парадигма психологічної науки, як вагомий освітній фактор національної безпеки держави, її громадян, об'єднаного європейського життєвого простору, має одночасно сконцентрувати і розв'язати актуальні цільові освітні перспективи, або пошукові стратегії, спрямовані на збільшення пізнавальних масштабів свого дослідницького поля, зокрема у психології дорослості, психології людей похилого віку, оскільки вже давно стабілізувалася пізнавальна ситуація, згідно з якою ці життєві етапи не мають навіть мінімальної



дослідницької уваги порівняно з молодшими віковими періодами (Aleksandrov, 2017; Ellis, 2002; Krajg, 2003; Vygotskij, 1984). Окремо знаходиться проблематика вікового кризового розвитку людини, де нормативні і ненормативні кризи тенденційно ототожнюються з суміжними стабільними життєвими стадіями. Як наслідок, усталений пошуковий дисбаланс та термінологічний хаос спричиняють аналогічну пошукову ситуацію у повсякденній професійній діяльності суб'єктів психологічного знання.

Мета дослідження. Довести теоретико-практичну необхідність з'ясування феноменології поняття “актуальна психологічна проблематика” як пізнавального орієнтиру для розвитку психологічної науки у контенті її цільових освітніх перспектив та нагального (пріоритетного) соціального запиту про життєдіяльність людини в умовах сприятливих і несприятливих соціальних впливів.

Методи:

Організаційні (пілотний зріз, лонгітюд, поперечний зріз); системно-структурний, історико-логічний та порівняльний аналіз першоджерел про особливості вікового та індивідуального розвитку людини; експеримент, аналітичне спостереження, теоретичне моделювання.

Результати:

І. Базовий зміст феномена “Актуальна психологічна проблематика” має визначатися анонсованими тут пошуковими стратегіями, які складають пізнавальну альтернативу 1) науковим уявленням про “ідеальну особистість”, коли методологічний принцип «як повинно бути» ігнорує принцип “як є насправді”, 2) спорадичним дослідницьким спробам, які, як правило, обмежені у календарному часі і “замикаються” на локальних чи нерепрезентативних вибірках, що призводить до продукування “загального знання” про людину, 3) реальному і потенційному дослідницькому вакууму про вікову специфіку психічних станів людини (передовсім йдеться про увагу), пізнавальних процесів (відчуття, сприймання, пам'ять, мислення, уява), емоційно-вольової сфери (передовсім – це воля), індивідуально-типологічних особливостей (особливо – характер), 4) недоказовим чи малоказовим висновкам і прогнозам про віковий розвиток людини та аналогічному використанню методів статистичної обробки отриманої емпіричної інформації, коли отримані кількісні результати розглядаються у ранзі якісних узагальнення (прикладі) (Polishchuk, 2019; 2020).



Стратегія 1. Розвінчування у громадян традиційних пізнавальних орієнтирів (життєвих стереотипів), згідно з якими знання психології дітей дошкільного віку і молодшого шкільного віку, підлітків, юнаків начебто уже попередньо обмежуються використанням, як правило, лише у системі освіти або сімейних взаємин. Насправді вони потрібні також для інженерної, економічної, юридичної психології, психології реклами, психології засобів масової інформації, психології управління, психології менеджменту, проектування професійної кар'єри тощо і з соціальним плином часу актуалізуються для інших психологічних галузей.

Очікувана соціальна перспектива: оптимізація особистісно-професійних взаємин, підвищення продуктивності праці у громадян, збереження їхнього фізичного і психічного здоров'я.

Стратегія 2. Системне теоретико-емпіричне вивчення психології дорослості, яка залишається малодослідженою порівняно з попередніми віковими інтервалами, не лише через традиційні поперечні зрізи, а з допомогою лонгітюдних наукових розвідок з використанням експериментальних змінних. Так, “психологія літнього віку” у дорослості належить до тих наукових тем, де життєвий досвід старших поколінь надійно гуртує суспільство у ситуації наростаючих воєнних, терористичних викликів і загроз.

Очікувана соціальна перспектива: систематизація доказової інформації про віковий розвиток людини; обмеження споглядальних міркувань і висновків, які призводять до термінологічної невизначеності, хаосу у виокремленні вікових періодів життєвого шляху типу “криз середнього віку”, “кризи 30 років”, “кризи 40 років”, “кризи середини життя” тощо без доказових емпіричних розвідок чи навіть без їхньої наявності, довільного тлумачення змісту, внаслідок чого відбувається суб'єктивне тлумачення вікового місцезнаходження людини, що унеможливує адекватні дослідницькі перспективи передовсім вікової, педагогічної, диференційної психології як наукових галузей, розроблення результативних розвивальних індивідуальних програм, рекомендацій тощо.

II. “Актуальна наукова проблематика” – це усвідомлена необхідність об'єктивного пізнання (наукового відкриття) у людини чи соціальних спільнот у конкретній сприятливій чи несприятливій соціальній ситуації розвитку. Продуктивне дослідження передбачає тут комплексне інформаційне відображення своїх смислів у трьох історичних хронологічних площинах “минуле – теперішнє – майбутнє”, де останній площині (“майбутнє”) “належить вирішальна прогностична роль у розробленні новітніх фундаментальних та



прикладних тематичних технологій з метою їх теперішнього і потенційного результативного застосування на основі конкретного актуального індивідуального чи групового соціального запиту. Характерно, означені смисли перебувають у сфері інтересів методології та організації наукових досліджень незалежно від галузевих наукових напрямків (Danilyan & Dzyoban, 2019; Krajg, 2003; Malska & Pankiv, 2020; Obidina, 2017; Yurchenko, 2017).

У зв'язку з цим у дослідницькій діяльності для виокремлення актуальної психологічної проблематики варто дотримуватися наступних методологічних настанов (прикладі) (Goncharenko, 2008):

1. Сконцентруватися на одній дослідницькій тематичі, – тобто обрати першочергові пошукові пріоритети, абстрагувавшись від інших (менш важливих), що дозволяє забезпечити цілісність дослідницької процедури, а, значить, обрати методологію дослідження та узгодити логістику його етапів.

Визначатися з такими пріоритетами допомагає дослідницька гіпотеза, яка конструює зміст потенційної наукової теорії, завдяки якій виробляється структурований план наукової діяльності, де відображається процес постійного вдосконалення “відкритого знання”, і, зрештою, виокремлюються пізнавальні перспективи досі “невідомого знання”. На жаль, пошукове значення гіпотези з початком ХХ ст. відверто припинюється, що виявляється у її відсутності для більшості досліджень як системного структурно-функціонального положення. Однак це 1) конкретний пізнавальний орієнтир, без якого наукова праця втрачає свій функціональний сенс через сумніви в науковій достовірності отриманих результатів; провідна стратегічна ідея дослідження, спрямована на розв'язання конкретного завдання, 2) своєрідна “візитівка”, “маркер”, що принаймні теоретично убезпечують наукову працю від спрощеності і деклараційності, 3) напрямок пошуку “чогось” невідомого в науці і практиці, 4) конструктивність (зрозумілість, прогностичність) наукової концепції, завдяки чому перевіряється життєдайність сформульованих методологічних положень, процес дослідження є організованим і коректним, а, значить, отримані емпіричні дані є дійсно ймовірними.

Зрештою, без гіпотези неможливо увиразнити актуальну проблематику.

2. Сформулювати зрозумілу і справді важливу для професійного повсякдення і для себе дослідницьку тематику (об'єкт і предмет дослідження), розв'язання якої вдосконалює, розвиває саме свій життєвий простір (матеріальний, інтелектуальний тощо), потім –



життєвий простір інших громадян з відповідними оптимістичними розвивальними перспективами.

Для цього нам варто орієнтуватися у споріднених дослідницьких темах задля уникнення їхнього паралелізму, дублювання та одноманітності змісту, уникати називати об'єктом чи предметом дослідження суб'єктів соціального процесу (учнів, студентів, учителів, батьків, навчальні ресурси тощо). Важливо бачити власний пізнавальний ракурс проблеми і не претендувати на “всезнайство”, яке уже попередньо засвідчує, з одного боку, необґрунтовану амбітність дослідника, а з другого, різнопланову обмеженість його загального кругозору часто на межі професійної неспроможності до виконання наукової роботи.

Характерно, що для розуміння доказових тактичних завдань досягнення (логістика) потенційного результату необхідно розробити проектну структурну або структурно-функціональну моделі предмета дослідження, доцільність яких виявиться у впровадженні змістовних технологій, ефективність яких перевірена у тривалому календарному дослідницькому часі (як мінімум, це 3–4 роки, тобто йдеться про лонгітюдні розвідки), а не ситуативних спробах. ефективність яких є доволі малопереконливою.

3. Змоделювати зміст проблематики (як приклад, це математичне моделювання за правилами формальної системи з допомогою математичних операцій), що дозволить перевірити задекларовану теоретико-емпіричну спроможність своєї теорії про шляхи її розв'язання, забезпечить збір нової інформації, виокремить приховані суперечності, створить цілісну картину досліджуваного предмета у системі різнопланових чинників впливу, а головне – унеможливить деклараційні узагальнення, які часто ні до чого не зобов'язують. У цьому контексті типовими є формулювання “До питання....”, “Про.....”, де уже заздалегідь прогнозується виклад “не самої сутності питання”, а споглядальні суб'єктивні судження на “сутність викладу” “сутності питання” на кшталт “нам здається”.

У таких випадках ми отримуємо низку несприятливих дослідницьких явищ як пізнавальних бар'єрів на шляху до істини (прикладі):

1. “Теоретизування проблеми”, або “книжкова вченість” (основна причина: відсутність належних емпіричних розвідок): 1) часто використовуються судження типу “на засадах комплексного підходу”, “системного підходу” без будь-якого пояснення їхньої специфіки у конкретній ситуації; 2) домінує “психологія фокусу” (досліднику здається, що варто лише заявити про відкриття, вже не кажучи про застосування, і навколишня дійсність позбудеться будь



якої несприятливої проблематики); 3) споглядальні висновки з претензією на “новітні узагальнення”, що лише ускладнює розуміння проблеми, формує у нового покоління дослідників хибні уявлення про стан “недостатнього розроблення”, а головне, що “такими мають бути наукові узагальнення”: 4) незрозумілість, очевидність, узагальнень, які насправді не потребують ніяких доведень (це “судження заради судження”, де відсутня будь-яка конкретика).

2. Деклараційне використання дійсно важливого стандартного вислову типу “надійність і вірогідність результатів ... забезпечувалася використанням надійних і валідних діагностичних методик, поєднанням якісного і кількісного аналізу емпіричних даних, репрезентативністю вибірки ...”.

3. Некоректне використання методів математичної статистики, де часто віддається “данина соціальної моді”. Не може бути “статистики” “заради статистики”. Дійсно, математичне вивчення зв’язків і залежностей у життєвих явищах є завершеним смыслом, коли базується на якісному аналізі, – тобто математичні методи не потрібно протиставляти іншим аналітичним методам (так, ніколи не втратить своєї результативності тривале природне спостереження, більше того – воно має домінувати). Однак часто відбувається підміна якісного аналізу кількісними даними, які до того ж можуть розглядатися поза контекстом вікових та індивідуальних особливостей людини чи різних соціальних впливів. Також типовою помилкою є використання недоказових (суб’єктивних) інтервальних шкал, тоді як психологічні проблеми – це прерогатива порядкових шкал.

Загалом “актуальна психологічна проблематика” має виразний кризовий стан. Так, у її масштабному полі вторинним явищем залишається експериментальне вивчення психічних станів, процесів, емоційно-почуттєвої сфери, індивідуально-типологічних особливостей. Практично відсутні тематичні теоретико-емпіричні дослідження про відчуття, волю, характер, уяву, оскільки такі пошукові домагання потребують від дослідника особливої професійної підготовки із схильністю до наукового ризику. Потребує вивчення вікова динаміка структур психіки, розвитку особистості у вузьких вікових інтервалах як відображення внутрішньої логіки розвитку на тлі загальних пізнавальних тенденцій окремих вікових періодів – дошкільного віку, молодшого шкільного, підліткового тощо. “Цілинною”, як уже зазначалося, залишається психологічна проблематика старших вікових періодів. Громадянське суспільство потребує також розроблення тематичних соціальних технологій для ситуацій функціональної напруженості, екстремальних і надзвичайних



ситуацій на основі реального об'єктивного соціального запиту, який, продукує, наприклад, сьгоднішня епідеміологічна ситуація і спричинена нею принципово нове соціально-психологічне повсякдення, якого людство не знало не лише з початку ХХ ст., а з 90-х років.

За розробленням кожної наукової проблеми постає конкретний науковець, визначальною рисою якого є не лише фундаментальна підготовка, а також загальнолюдські якості, позначені культурою поведінки і культури мислення, відсутністю фарисейства, стабільним прагненням до пошуку істини.

Висновки:

1. Ігнорування у повсякденній професійній дослідницькій практиці базових смислів феноменів “актуальна наукова проблематика” чи “актуальна психологічна проблематика” обов'язково призводить до продукування догматичної, компілятивної інформації, яка, у свою чергу, стане основою для формулювання наступної схожої “проблеми”, актуальної хіба що в уявленнях її автора, і, зрештою, до дискредитації наукового психологічного знання.

2. Будь-яка актуальна проблематика має результативні перспективи свого доказового розв'язання лише тоді, коли вивчається у руслі об'єктивного адресного вікового та соціумного місцезнаходження особистості у системі її життєвого шляху.

3. Розроблення актуальної психологічної проблематики завжди матиме оптимістичні перспективи, якщо її суб'єкти (дослідники; психологи різних виробничих сфер) налаштовані на безкомпромісний пошук варіантів її розв'язання. Тоді у Людини формується соціальна відповідальність, нетерпимість до подвійних моральних стандартів, стабільним є задоволеність від життя, і, як наслідок, забезпечується ефективна продуктивність праці, зберігається і зміцнюється фізичне та психічне здоров'я.

Conflicts of interests:

The author declares that there is no conflict of interests.

Source of support:

This research did not receive any outside funding or support.

References

Aleksandrov, A. A. (2017). *Psykhohenetyka [Psychogenetics]*. Piter. <https://avidreaders.ru/book/psihogenetika.html> [in Russian]



- Danilyan, O.H., & Dzyoban, O. P. (2019). *Metodolohiya naukovykh doslidzhen [Scientific research methodology]*. Pravo. https://pravozdat.com.ua/image/data/Files/592/3_Metodologija_vnutri.pdf [in Ukrainian]
- Ellis, A. (2002). *Overcoming resistance: A rational emotive behavior therapy integrated approach* (2nd ed.). Springer Publishing Co. <https://psycnet.apa.org/record/2003-04406-000>
- Goncharenko, S. U. (2008). *Pedahohichni doslidzhennya [Pedagogical researches]*. Vinnytsia. <https://hum.edu-lib.com/pedagogikapsihologiya/goncharenko-s-u-pedagogichni-doslidzhennya-metodologichni-poradi-molodim-naukovtsyam> [in Ukrainian]
- Krajg, G. (2003). *Psikhologiya razvitiya [Development psychology]*. <https://www.psyoffice.ru/3340-krajgg-grjejs.-psikhologija-razvitija.html> [in Russian]
- Malska, M., & Pankiv, N. (2020). *Osnovy naukovykh doslidzhen [Fundamentals of scientific research]*. LNU. <https://geography.lnu.edu.ua/wp-content/uploads/2021/01/Osnovy-naukovykh-doslidzhen-Pan-kiv-Malska.pdf> [in Ukrainian]
- Obidina, Yu. S. (2017). *Filosofiya i metodologiya nauki [Philosophy and methodology of science]*. http://www.imomi.unn.ru/images/uploads/2019/obidina_filosofia.pdf [in Russian]
- Polishchuk, V. M. (2019). Crisis behavioural symptoms set in person's age development. *International Journal of Education and Science*, 2(2), 51. <https://doi.org/10.26697/ijes.2019.2.37>
- Polishchuk, V. M. (2020). *Vikovyy kryzovyy rozvytok lyudyny vid dnya narodzhennya do doroslosti [Age-related crisis of human development: from birth to adulthood]*. *Universytetska Knyha*. https://elibrary.kubg.edu.ua/id/eprint/33302/6/V_Polishchuk_VKRL_2020_IL.pdf [in Ukrainian]
- Vygotskiy, L. S. (1984). *Sobraniye sochineniy [Collected works]*. http://elib.gnpbu.ru/text/vygotsky_ss-v-6tt_t4_1984 [in Russian]
- Yurchenko, S. O., & Yurchenko, O. Ye. (2017). *Osnovy naukovykh doslidzhen [Fundamentals of scientific research]*. <https://www.univer.kharkov.ua/images/redactor/news/2017-12-12/Yurchenko> [in Ukrainian]

Information about the author:

Polishchuk Valerie Mykolayovych – <https://orcid.org/0000-0002-1283-1640>; Doctor of Psychological Sciences, Professor, Borys Grinchenko Kyiv University, Kyiv, Ukraine.



Research interests: age development psychology, social psychology, management psychology, theoretical and methodological problems of psychology.

Cite this article as:

Polishchuk, V. M. (2021). Problematyka psycholohichnoi nauky v aktualnomu sotsialnomu vymiri [Problem issues of the psychological science in the actual social dimension]. In Yu. B. Melnyk, & L. M. Georgieva (Eds.), *Current Issues of Education and Science. 9th International Conference, CIES-2021, Riga, Latvia – Kharkiv, Ukraine, November 10–13, 2021, Conference proceedings* (pp. 33–43). KRPOCH. <https://doi.org/10.26697/9786177089147.2021.05> [in Ukrainian]

Copyright information:



The published paper are licensed under a Creative Commons “Attribution” 4.0 Worldwide



The electronic version of this article is complete. Full or partial reproduction of article is allowed, citing to the source, author(s) and DOI. An electronic copy of the Conference proceedings in open access is available via the KRPOCH Publishing website <https://publisher.culturehealth.org>



Current Issues of Education and Science, 2021
Conference proceedings. ISBN: 978-617-7089-14-7
<https://doi.org/10.26697/9786177089147.2021>
PSYCHOLOGY



DOI: <https://doi.org/10.26697/9786177089147.2021.06>

Creative Potential Development in the Structure of the Future Designer Professionalism

Elena V. KOSTIUCHENKO¹ 

¹ Kyiv National University of Culture and Arts, Ukraine

Corresponding Author Details

Elena V. KOSTIUCHENKO, g2069544@gmail.com

Received: 25.09.2021; Accepted: 22.10.2021; Published: 17.12.2021

Brief Summary

Background: *The problem of the designer's creative personality formation by effective remedies and methods of his affective, personal, social, and cognitive spheres development through his inclusion in artistic and design activity is relevant.*

The aim of the study: *To determine the development features of the creative potential of the future designers' personalities.*

Methods: *Analysis, synthesis, systematization, and generalization of theoretical principles on creative activity, conditions for the creative personality formation and creative abilities development, design as a synthesis of technique and art, formation of design education, professional education of future designers.*

Results: *The creative potential within the framework of the activity approach and its components are defined as a set of properties of a particular character and intensity of interrelation, characterizing the extent of a person's ability to carry out the creative activity. The main features of design and artistic creativity, which make up the designer's professionalism and features of their identification in a professional occupation, are highlighted. The system of methods, techniques for the development of motivational-target, cognitive-content, and reflexive-creative components of the creative potential of future designers is presented. This system is aimed at awareness of the system of images "I (professional)-Others-World";*



integration of creative and cognitive activities; artistic and figurative modeling; modeling of actual reality; metaphorical modeling of own professional brand, professional purpose, resources of own professional growth, ways of professional self-realization, relations in the professional environment, etc.

Conclusions: *The peculiarities of the creative potential development of the future designers' personality in professional training are theoretically analyzed, elements of its comprehensive educational and methodological support on a psychological basis are developed; peculiarities of design and artistic activity, content and structure of designer's professionalism are revealed.*

Keywords:

creative potential, creative potential development, creativity, designer's professionalism components, design and artistic activity.

Background:

The peculiarities of society's socio-cultural development, a significant number of innovative technologies, increasing the rate of their production and consumption cause toughening requirements for the professional training of various design specialties specialists, which determine the need for innovative approaches to education, updating its content taking into account the creative development of the individual. The problem of forming the designer's creative personality by effective means and methods of his affective, personal, social, and cognitive spheres development, as well as inclusion in artistic and project activities related to creating a harmonious socio-cultural, information and communication, subject-spatial environment, and products that satisfy the material, aesthetic and spiritual needs of a person is relevant.

The aim of the study. To determine the features of the future designers' creative potential development.

Methods:

The research uses such general scientific theoretical methods as analysis (including retrospective analysis of philosophical, socio-psychological, psychological and pedagogical studies), synthesis, theoretical positions systematization and generalization: about the peculiarities of the realization and development of creative potential, creative strategies and practices, creativity of the individual (Guilford, 1967; Kaplan, 2019; Kaufman & Sternberg, 2006; Melnyk & Pypenko, 2017; Moliako, 2007; Richardson & Mishra, 2018; Torrance, 1962; Urban, 2014); on the formation and realization of the creative personality of the



designer in professional activities as a synthesis of technology, creativity and art (Berman, 2011; Judkins, 2001; Kalinicheva et al., 2011; Kostiuchenko, 2018; Madjugina & Tolmacheva, 2017; Meadows, 2009). Analysis of the theory and practice of future designers' professional training makes it possible to confirm the lack of a holistic, systematic and consistent study in psychology and pedagogy of the creative potential development of the specialists' personality in this field.

Results:

We believe that within the framework of the activity approach, the most productive definition of creative potential is offered as a set of properties of a particular character and the interaction intensity that characterize the degree of individual ability to carry out a creative activity. We take as a basis specific components of Moliako (2007) in the structure of creative potential: motivational (curiosity, desire to create something new, to find and solve problems); emotional (inclinations, setbacks; emotional coloring of individual processes, emotional attitude); intuitionism – the ability to manifest unconscious rapid (sometimes instantaneous) assessments; strong-willed (persistence, systematic work; purposefulness, determination); intellectual (speed in assimilating new information); manifestations of universal intelligence. Accordingly, the development of the creative potential of the designer's personality should be carried out through his involvement in various creative activities, in particular, design and artistic creativity, covering the entire process of work and including artistic activity, artistic mastering of objective complex and multifaceted reality, selecting those sides and manifestations that most forcefully reveal their inner world, worldview, tastes, the artistic position of the designer. Systemic thinking, creative thinking, the art of thinking play a significant role in the designer's activity implementation (Kalinicheva et al., 2011; Madjugina & Tolmacheva, 2017). It is in design and artistic creativity, the main features of which are: novelty and originality of the activity or its result, artistic product; creative results social significance, enrichment of predecessors experience and progressive nature of the activity, the designer's professionalism is manifested in the author's style, which embodies the depth of author's thought through plastic, accuracy, and movements coherence, ability to interpret, activation of sensorimotor, perceptual, mnemonic, imaginary (in particular, a non-standard vision in the known new possibilities of its functioning, production of an unlimited number of ideas, the flexibility of thinking and behavior, independence), which are closely related to the general orientation of the individual, new



forms of self-realization and personal creativity with the degree of stability of the propensity of the specialist to certain activities (Kostiuchenko, 2018).

The creative activity of a designer in its essence may not always have outstanding results, but participation in creative activity has a positive effect on the personality through improving the future specialist's qualities as a creative person, emotional immersion, general and aesthetic satisfaction with the activity process and products; understanding the essence of the problem, task, situation; unconscious, intuitive problem solving ("out of logic"); strategic in intellectual behavior (personal ability to produce projects); a variety of solutions; the speed of decisions, estimates, forecasts; the art of finding; to choose (ingenuity).

In the structure of personality professionalism, the designer is distinguished by the following main components: mental component (high level of cognitive activity and interest, speed and accuracy of performing mental operations, due to the stability of attention and RAM, the formation of logical thinking skills and a clear algorithm for action, the richness of the active dictionary, the speed of occurrence and the originality of visual and verbal associations, the expressed attitude to the creative fulfillment of the task, the development of creative thinking and fantasy, the desire to learn); cognitive component (understanding the material, its comprehension, figurative thinking); qualities (empathy, strong-willed qualities of a person's creative attitude to the performed activity, psychological readiness to study and work, awareness of their abilities, criticality, motivation and independence of their assessment); personal artistic and aesthetic experience (value attitude to design as art, artistic and aesthetic knowledge and professional skills that ensure the formation of aesthetic tastes and feelings, aesthetic worldview and views) and the ability to creativity. The arsenal of professional methods of design specialists should be based on the experience of creative art influence, artistic means of self-realization of expressive activity, expression of received and processed information outside, and its transformation following their individual experience.

The development of future designers' creative potential is understood by us as a dynamic non-linear process of their professional and personal transformation from a point of view aimed at mastering professional knowledge, acquiring skills, abilities in the field of human harmonization and substantive reality.

At the Kyiv National University of Culture and Arts, as the part of the discipline study "Psychology of Artistic Creativity", for the development of motivational-target, cognitive-substantive, and reflective-creative components of the creative potential of future design professionals offer a variety of active methods and techniques based on different levels of



knowledge, rational-logical, figurative, metaphorical, symbolic, intuitive). In particular, various methods of creative and cognitive activity integration are used to realize creative and adaptive potentials of future designers training in the process of storage and distribution (distribution or interconnection) of information: instrumental (group problem solving, algorithm definition, or set of general rules which observance leads to the invention of an optimal solution) and personal (direct management of their behavior, build self-confidence, self-esteem, contribute to the awareness of endless opportunities for self-improvement in any sphere of life), which involve different types of thinking (creative, intuitive, critical, evaluative, visual, figurative, metaphorical).

The following well-known methods-strategies proved to be expedient: Morphological Analysis, Functional and Physical Design Technique, Algorithm for Inventive Problem Solving, Brainstorming, Synectics, Socratic Method, Mind maps, “CARUS” (strategy for the implementation of combinatorial, reconstructing and universal actions, the search for analogies). In the design and artistic activity the principle of creative combination, reconstruction, and analogization of ideas, images and means is implemented, as a result of which the artistic integrity of the image created in demand and the flexible aesthetic concept of the designer is understood – as a professional assessment combined with the correspondence of the image to aesthetic requirements and creative improvisation. The multidimensionality and multifunctionality of images formed by the designer during his work, appear in the course of active acquisition and processing of information, is a specific alloy of the real object reflection perceived by the subject and the subject’s previous experience in perceiving such objects and interaction with them, ie, the revealed structure of the internal reality reflection. The experience of using such a psychological method of developing the creative potential of the individual as modeling and its varieties: systemic, symbolic, spatial, metaphorical, role, self-modeling, has shown its effectiveness in finding optimal solutions, assessing options, vision, objects, objects from different sides. Students were invited to represent the system of images “I”, “I-designer”, “Other”, “World” by means of: a) artistic modeling, which is based primarily on emotional, subconscious and holistic vision of the final result of creativity, on the principle of “from general to partial”, perception comes from the whole to more and more differentiated structures with the obligatory fixation of the new in the object, the situation, the relationship between the perceived external parameters of the design object; b) modeling of actual reality through images-metaphors (Kostyuchenko, 2020) as an effective tool of cognitive-creative process in rapid orientation in changing



conditions, own adaptability, potentiality, stabilization, solving life and professional problems; c) realization of the dynamic nature of formation and development of own image “I-specialist” through presentation in the form of metaphorical image: own professional brand, professional purpose, resources of own professional growth, ways of own professional self-realization, relations in professional environment, etc. where the process becomes important perception, ideas about the relevant qualities for the chosen profession, skills and abilities, about their own place in the profession, as well as the accumulation of various information about themselves as a specialist, forming a status-role position, ensures the emergence of the first self-assessment.

Conclusions:

Theoretical analysis of the future designers’ creative potential development in professional training is carried out. The peculiarity of artistic and design activity, content, and structure of a designer’s professionalism, which is subject to general laws of personality’s creative development, is determined by a combination of several components: mental, cognitive, motivational, personal, creative. It has been found out that in design and artistic activity, the development of the creative potential of the designer’s personality occurs through the activation of his creative perception and creative understanding in creative activity, and vice versa, in creative and cognitive activity, a new perception of the object arises for the implementation of creative ideas as a result of internal work mastering emotional-psychological, informational, cultural influence. A comprehensive educational and methodological support for the development of future designers’ creative potential has been developed. Using the above methods-strategies for finding creative solutions allows the designer to get a significant number of design-conceptual solutions.

Conflicts of interests:

The author declares that there is no conflict of interests.

Source of support:

This research did not receive any outside funding or support.

References

Berman, D. (2011). *Do good design: Kak dizayneriyi mogut izmenit mir [Do good design: How designers can change the world]*. Simvol-Pljus. <https://ua1lib.org/book/2875187/69e5ab> [in Russian]



- Guilford, J. P. (1967). Creativity: Yesterday, today, tomorrow. *Journal of Creative Behavior*, 1(1), 3–14. <https://doi.org/10.1002/j.2162-6057.1967.tb00002.x>
- Judkins, R. (2001). *The art of creative thinking*. Sceptre. <https://docplayer.net/190608094-The-art-of-creative-thinking-by-rod-judkins.html>
- Kalinicheva, M. M., Solodovichenko L. N., & Chepurova O. B. (2011). Kreativnost i preemstvennost v otechestvennom dizayne [Creativity and continuity in domestic design]. *Vestnik Orenburgskogo gosudarstvennogo universiteta – Bulletin of the Orenburg State University*, 9, 9–20. <https://cyberleninka.ru/article/n/kreativnost-i-preemstvennost-v-otechestvennom-dizayne> [in Russian]
- Kaplan, D. E. (2019). Creativity in education: Teaching for creativity development. *Psychology*, 10(2), 140–147. <https://doi.org/10.4236/psych.2019.102012>
- Kaufman, J., & Sternberg, R. (2006). *The international handbook of creativity*. Cambridge University press. <https://psycnet.apa.org/doi/10.1017/CBO9780511818240>
- Kostiuchenko, O. V. (2018). Vizualizovana obiektyvatsiia dyzainerskoho svitospriymannia v dyzain-produkti [Visualization of the design worldview in the design product is visualized]. *Visnyk KNUKIM. Kultura i mystetstvo v suchasnomu sviti – Bulletin of KNUKIM. Culture and Art in the Modern World*, 37, 292–303. <https://doi.org/10.31866/2410-1176.37.2017.155654> [in Ukrainian]
- Kostyuchenko, O. (2020). Recreational potential of metaphorization in mental self-regulation of the students. *Mental Health: Global Challenges Journal*, 3(2), 28–37. <https://doi.org/10.32437/mhgcej.v4i2.78>
- Madjugina, M. A., & Tolmacheva, G. V. (2017). Kreativnost i tvorcheskoe myishlenie kak vajnyie sostavlyayuschie professionalnyih kompetensiy studentov-dizaynerov [Creativity and creative thinking as important components of the professional competencies of design students]. *Mejdunarodnyiy jurnal eksperimentalnogo obrazovaniya – International Journal of Experiential Education*, 7, 32–35. <https://expeducation.ru/ru/article/view?id=11718> [in Russian]
- Meadows, D. H. (2009). *Thinking in systems*. Earthscan. <https://wtf.tw/ref/meadows.pdf>
- Melnyk, Yu., & Pypenko, I. (2017). Innovative potential of modern specialist: The essence and content. In Yu. B. Melnyk (Ed.), *Psychological and Pedagogical Problems of Modern Specialist*



- Formation* (pp. 9–16). ANAGRAM; KRPOCH.
<https://doi.org/10.26697/9789669726094.2017.9>
- Moliako, V. (2007). Tvorchyi potentsial yak psykholohichna problema [Creative potential as a psychological problem]. *Psykholohiia i suspilstvo – Psychology and Society*, 4, 6–10.
<http://dspace.wunu.edu.ua/handle/316497/30250> [in Ukrainian]
- Richardson, K., & Mishra, P. (2018). A learning environment that supports student creativity: Developing SCALE. *Thinking Skills and Creativity*, 27, 45–54. <https://doi.org/10.1016/j.tsc.2017.11.004>
- Torrance, E. P. (1962). *Guiding creative talent*. Prentice-Hall, Inc.
<https://doi.org/10.1037/13134-000>
- Urban, K. K. (2014). From creativity to responsible createlligence. *Gifted Education International*, 30(3), 237–247.
<https://doi.org/10.1177/0261429413485399>

Information about the author:

Kostiuchenko Elena Viktorovna – <http://orcid.org/0000-0001-7853-2670>;
Doctor of Psychological Sciences, Associate Professor, Assistant Professor
at the Department of Psychology, Kyiv National University of Culture and
Arts, Kyiv, Ukraine.

Research interests: mental health and adaptation, recreational aspects of art
and artistic creativity, resource and health-saving technologies, management
psychology, psychology artistic work, constituents creative and professional
potential of personality, etc.

Cite this article as:

Kostiuchenko, E. V. (2021). Creative potential development in the structure
of the future designer professionalism. In Yu. B. Melnyk, &
L. M. Georgieva (Eds.), *Current Issues of Education and Science. 9th
International Conference, CIES-2021, Riga, Latvia – Kharkiv, Ukraine,
November 10–13, 2021, Conference proceedings* (pp. 44–51). KRPOCH.
<https://doi.org/10.26697/9786177089147.2021.06>

Copyright information:



The published paper are licensed under a Creative Commons
“Attribution” 4.0 Worldwide



The electronic version of this article is complete. Full or partial
reproduction of article is allowed, citing to the source, author(s) and
DOI. An electronic copy of the Conference proceedings in open
access is available via the KRPOCH Publishing website
<https://publisher.culturehealth.org>



Current Issues of Education and Science, 2021
Conference proceedings. ISBN: 978-617-7089-14-7
<https://doi.org/10.26697/9786177089147.2021>
PSYCHOLOGY



DOI: <https://doi.org/10.26697/9786177089147.2021.07>

Psychological Transformation Game “My Dao” as an Effective Method of Psychologist Practice

Yuriy B. MELNYK^{1,2} , Anatoliy V. STADNIK^{1,2,3,4} 

¹ Kharkiv Regional Public Organization “Culture of Health”
(KRPOCH), Ukraine

² Scientific Research Institute KRPOCH, Ukraine

³ Social-Psychological Center KRPOCH, Ukraine

⁴ Kharkiv National University of Internal Affairs, Ukraine

Corresponding Author Details

Yuriy B. MELNYK, ybm.office@gmail.com

Received: 17.08.2021; Accepted: 27.09.2021; Published: 17.12.2021

Brief Summary

Background: Psychologists should have a wide arsenal of modern effective methods of psychological practice. Psychological transformation games are becoming more and more popular, with great potential for solving a wide range of problems related to clients' mental health.

The aim of the study: To explore the effectiveness of the author's methodology of psychological transformation game “My Dao” according to Schwartz's model of value orientations.

Methods: The study participants were 134 people, including 75 men and 59 women aged 17-35 years. The control group consisted of 126 people, including 69 men and 57 women aged 18-30 years. Values for the study and control groups were calculated using the SPSS Statistics module. The obtained results prove statistical significance ($p < 0.05$).

Results: The greatest significance of the influence of the author's game on the participants is observed at the level of normative ideals: tradition, conformity, security, hedonism and universalism. This indicates a certain change in it towards an increase in harmony and stability, as well as a decrease in humility, acceptance of one's destiny. At the level of



individual priorities, there is an increase in hedonism, power and stimulation, which indicates an increase in the role of pleasure, academic achievement, ambition, desire for novelty and deep experience. The obtained high rates of universalism, hedonism, independence and conformity indicate an increase in understanding, tolerance, pleasure in life, self-control, self-management, self-discipline and politeness among the participants in the game.

Conclusions: *The use of the transformational game “My Dao” in psychological practice is an effective psychotherapeutic method that affects the participants’ value orientations, changes in self-esteem and motivation, the disclosure of their personal resources for problem solving and further development.*

Keywords:

psychological transformational game, value orientations, motivation, diagnostics, tools, psychological problems.

Психологічна трансформаційна гра “Му Дао” як ефективний метод роботи психолога

Юрій Б. МЕЛЬНИК^{1,2} , Анатолій В. СТАДНИК^{1,2,3,4} 

¹ Харківська обласна громадська організація “Культура Здоров’я”
(ХОГОКЗ), Україна

² Науково-дослідний інститут ХОГОКЗ, Україна

³ Соціально-психологічний центр ХОГОКЗ, Україна

⁴ Харківський національний університет внутрішніх справ, Україна

Деталі Автора-Кореспондента:

Юрій Б. МЕЛЬНИК, ybm.office@gmail.com

Анотація

Вступ: Психологи мають володіти широким арсеналом сучасних ефективних методів психологічної практики. Все більш затребуваними стають психологічні трансформаційні ігри, які мають великий потенціал щодо розв’язання широкого кола проблем, пов’язаних з психічним здоров’ям клієнтів.

Мета дослідження: Дослідити ефективність авторської методики психологічної трансформаційної гри “Му Дао” за діагностикою ціннісних орієнтацій Шварца.

Методи: Учасниками дослідження були 134 особи, серед них 75 чоловіків та 59 жінок віком 17-35 років. Контрольну групу склали 126



особи, серед них 69 чоловіків та 57 жінок віком 18-30 років. За допомогою модуля SPSS Statistics здійснювались розрахунки значень для досліджуваної і контрольної груп. Отримані результати доводять статистичну значимість ($p < 0.05$).

Результати: Найбільша значущість впливу авторської гри на учасників спостерігається на рівні нормативних ідеалів: традиції, конформності, безпеки, гедонізму та універсалізму. Це свідчить про певну зміну їх у бік збільшення гармонії і стабільності, а також зменшення смиренності, прийняття своєї долі. На рівні індивідуальних пріоритетів спостерігається збільшення гедонізму, влади та стимуляції, що вказує на зростання ролі задоволення, успішності, амбітності, прагнення до новизни та глибоких переживань. Отримані високі показники універсалізму, гедонізму, самостійності та конформності вказують на зростання розуміння, терпимості, насолоди життям, самоконтролю, самоврядування, самодисципліни та ввічливості в учасників гри.

Висновки: Використання в психологічній практиці трансформаційної гри "Му Dao" є ефективним психотерапевтичним методом, який впливає на ціннісні орієнтації учасників, зміну самооцінки і мотивації, розкриття їхніх особистісних ресурсів для вирішення проблем і подальшого розвитку. Ця методика є достатньо універсальною за віковою категорією учасників і за можливістю вирішення психологічних проблем.

Ключові слова:

психологічна трансформаційна гра, ціннісні орієнтації, мотивація, діагностика, інструментарій, психологічні проблеми.

Важливо не те, чого Ви досягли у своєму житті або що залишили після себе – важливо, як Ви жили (Yu. B. Melnyk).

Вступ:

Із розповсюдженням пандемії COVID-19 у багатьох країнах запроваджене соціальне дистанціювання, що впливає на психоемоційний стан населення та сприяє проявам девіантної поведінки, невротичним розладам тощо. Все це підвищує попит на психологічну допомогу та актуалізує психопрофілактичні та психогігієнічні заходи серед різних верств населення (Melnyk, Stadnik, & Rurenko, 2020).

Серед широкого кола психологічних підходів, а також методів, які в них використовуються, розглянемо один з найбільш



універсальних, на нашу думку – метод психологічної гри. Психологічна гра, на відміну від “розважальної гри” або “освітньої гри”, що зосереджені переважно на відпочинку або навчанні (інтелектуальному розвитку), здійснює вплив на всі сфери життєдіяльності особистості: мотиваційну, когнітивну, афективну, канативну, ціннісну, а також сприяє покращенню психічного здоров’я особистості в цілому (Melnyk, 2004).

Останнім часом серед психологів та психотерапевтів все більш затребуваними є психологічні трансформаційні ігри, оскільки вони як прямо, так і опосередковано вирішують широке коло проблем, пов’язаних з психічним здоров’ям їхніх клієнтів. Зокрема розвивають пізнавальну активність, емоційний інтелект, соматичне усвідомлення та архетипічну інтеграцію, ціннісні орієнтації, чим сприяють психологічно значущим особистим трансформаціям.

Отже, для психолога ігрова форма діяльності є універсальною і привабливою, вона моделює проживання важких ситуацій та їх розв’язання. Тому в сучасній психологічній практиці активно використовуються трансформаційні ігри.

Мета дослідження. Дослідити ефективність авторської методики психологічної трансформаційної гри “Му Dao” Ю. Мельника, А. Стадника за методикою діагностики ціннісних орієнтацій Ш. Шварца.

Методи:

У дослідженні використано інструментарій психологічної трансформаційної гри “Му Dao” (Melnyk & Stadnik, 2018b). Методика діагностики ціннісних орієнтацій Ш. Шварца (адаптація В. Карандашева) (Karandashev, 2004) використовувалась для перевірки ефективності впливу розробленої методики психологічної трансформаційної гри “Му Dao” на учасників дослідження.

В дослідженні взяли участь 134 особи, серед них 75 чоловіків (55.97%) та 59 жінок (44.03%) віком 17-35 років. Контрольну групу склали 126 особи, серед них 69 чоловіків (54.76%) та 57 жінок (45.24%) віком 18-30 років.

Використовувались методи математичної статистики – критерій Пірсона (χ^2). За допомогою модуля SPSS Statistics здійснювались розрахунки середніх значень цінностей особистості досліджуваної і контрольної груп. Отримані результати доводять статистичну значимість ($p < 0.05$).



Результати:

Одним з ефективних методів у роботі психолога є психологічна гра. При цьому за формою та змістом вона, як правило, зрозуміла і цікава широким колам населення будь-якого рівня підготовки. Завдяки цим особливостям психологічна гра може бути сучасним, технологічним і універсальним інструментом психологічної допомоги.

Гра є універсальним феноменом людського буття, властивим всім без винятку людським співтовариствам. В аналізі феномена гри сучасна наука спирається на історично сформовані підходи в теорії гри попередніх епох, кожна з яких характеризується власними поглядами на її сутність (Guzik, 2012).

Найбільший внесок в сучасне наукове розуміння і тлумачення феномена гри внесли Berne (1964/2016); Fink (2016); Huizinga (1938/2016).

Людська культура виникає і розгортається в грі. Культура виникає у формі гри, спочатку вона розігрується і тим самим закріплюється в житті суспільства, передається від покоління до покоління (Huizinga (1938/2016).

Гра – це комплекс прихованих транзакцій, що повторюються і характеризуються чітко визначеним психологічним виразом. Під час прихованої транзакції учасник найчастіше прикидається, оскільки створює видимість, що робить щось одне, а в дійсності робить зовсім інше. У загальному плані ігри є нескінченним і динамічним елементом несвідомого плану або сценарію життя кожної людини (Berne, 1964/2016).

Fink (2016) називає гру п'ятим з основних феноменів людського існування, останнім в ієрархічному сенсі, менш значним і вагомим, ніж смерть, праця, панування та любов. Для нього гра настільки ж відвічна, як і ці феномени. Вона охоплює все людське життя до самої підстави, опановує нею і істотним чином визначає буттєвий склад людини, а також спосіб розуміння буття людиною. Вона пронизує інші основні феномени людського існування, будучи нерозривно переплетеною і скріпленою з ними.

На певному етапі розвитку суспільства ігрові практики все більш явно проявляються в неігрових контекстах, а ігрова логіка починає цілеспрямовано використовуватися для вирішення певних завдань, зокрема ділових, управлінських та навчальних. В сучасній науці ці процеси описуються терміном “іграїзація” або “гейміфікація” (Frissen et al., 2015).

Nicholson (2015) пропонує модель “значущої гейміфікації – RECIPE” для трансформативного довгострокового впливу на



поведінку клієнтів, засновану на внутрішній мотивації. В рамках сформованої системи суспільних відносин гра виступає одним з механізмів передачі культурних традицій від одного покоління до іншого (Nicholson, 2015). Багато дитячих ігор, в ході яких відбувається соціалізація дитини, є імітацією самих різних дій, здійснюваних людьми в реально-життєвих ситуаціях. Гра може бути імітацією конфлікту. Переживши конфлікт в ігровій формі, людина виявляється підготовленою до дій у разі його реального розгортання.

За сучасними поглядами гра – це відображення реальності, моделювання проживання важких ситуацій. А ділова гра виступає як засіб і метод підготовки і адаптації до трудової діяльності, соціальних контактів в професійних ситуаціях.

Сучасною формою роботи психолога є трансформаційна гра (Faerman, 2020). Ігрова технологія використовується як універсальний і привабливий вид діяльності і пізнання, форма і методика навчання. Ігрова діяльність виконує такі основні функції (Cherevko, 2006): розважальну (надання задоволення, пробудження інтересу, надихання до подальшої діяльності); комунікативну (навчання міжособистісному спілкуванню, засвоєння соціально-культурних цінностей); самореалізації (це полігон практичної діяльності); терапевтичну (подолання різних труднощів, що виникають в інших видах життєдіяльності); діагностичну (виявлення відхилень від нормативної поведінки, самопізнання в процесі гри); коригувальну (внесення позитивних змін в структуру особистісних якостей); соціалізаційну (включення в систему суспільних відносин, засвоєння норм людського співіснування).

З'ясовано, що трансформаційні ігри мають потужний мотивувальний потенціал (Heckhausen, 1977). Дієвість трансформаційної гри забезпечується "ефектом Зейгарника" (ефект незавершеної дії та ефект очікування), який може викликати відчуття наближення успіху в досягненні мети. Крім того, за рахунок умов гри опір учасників послаблюється, і активується внутрішня мотивація за рахунок ефектів поля (Lewin, n.d.).

Перевагою трансформаційних ігор є те, що вони захоплюють, підвищують рівень групового збудження, поряд з так званою ігровою відповідальністю, підвищують реактивність у ситуації гри (Myers, 2009).

Отже, дослідження наукової літератури дозволило нам зробити висновки, що для роботи психолога ігрова форма діяльності має переваги, тому що вона:

- допомагає у встановленні контакту з клієнтом;



- сприяє зняттю бар'єрів спілкування;
- безпосередньо працює з підсвідомим;
- дозволяє усвідомити, відчувати і вербалізувати актуальні, хвилюючі проблеми;
- здійснює пошук несподіваних рішень, поглядів та відкриттів;
- виробляє нові варіанти подолання проблем.

Для клієнта психологічна гра важлива, тому що це:

- метод навчання, який дозволяє краще розуміти себе і свої цінності, розібратися в своїх проблемах;
- допомога в досягненні важливої життєвої або професійної мети;
- спосіб зміцнення взаємин з оточенням (рідними, близькими, колегами тощо);
- можливість розібратися у міжособистісних та внутрішньоособистісних конфліктах;
- шлях тренування психофізіологічної та психосоматичної діяльності, вироблення нових навичок;
- спосіб контакту з підсвідомим та порозуміння причин своїх життєвих перешкод;
- можливість релаксації, приємного проведення часу та альтернативного відпочинку в ігровому форматі.

В сучасній психології існує декілька теорій періодизації психічного розвитку людини в онтогенезі. Кожна з цих теорій є цінною та знаходить своє певне відображення в теоретичних засадах розробленої методики “My Dao”.

На кожному етапі більш актуальними стають ти чи інші цінності особистості. Вони впливають на життєву спрямованість, професійну та сімейну орієнтацію, професійне зростання та інші мотиви, що формують особистість (Melnyk, 2017; Melnyk & Stadnik, 2018a).

Зміст та особливості використання психологічної трансформаційної гри “My Dao” або “Мій шлях” (далі – “My Dao”) розкрито (Melnyk & Stadnik, 2018b).

Стисло розглянемо основні методологічні, теоретичні та методичні положення цієї методики.

Методологія “My Dao” є складним переплетінням психологічних підходів, теорій та технік, серед яких:

- психоаналітичний підхід до аналізу особистості гравця через дослідження психологічних механізмів “Ego”-захисту та використання психоаналітичних технік;



- аналітичний підхід до аналізу комплексів та несвідомого через обрання та інтерпретації вибору ігрових фігур гравцями;
- транзактний аналіз (структурний аналіз, транзактний аналіз, аналіз гри, аналіз сценарію) до дослідження взаємодії гравців у спілкуванні, що супроводжується представленням їх позицій;
- гештальт підхід до інтерпретацій та обговорення карток-картин та карток-стимулів, які здійснюють учасники в процесі гри;
- індивідуальний підхід до аналізу життєвих цілей та стилю життя на різних вікових етапах (ігрових зонах) у гравців;
- діяльнісний та тілесно-орієнтований підхід до аналізу поведінки та невербальних дій гравців, які вони здійснюють під час гри.

Серед багатьох методологічних підходів та теорій, на які ми спирались у розробці “*My Dao*”, особливо слід виокремити теорію діяльнісної періодизації. Відповідно до цієї теорії психологи традиційно виокремлюють періоди дитинства, підліткового, юнацького віку.

У розробленій нами методиці ми умовно поділили гру на три етапи:

- 1) дитинство, де провідним видом діяльності є гра;
- 2) підлітковий та юнацький вік, де провідним видом діяльності є навчання;
- 3) період зрілості та похилого віку, де провідним видом діяльності є професійна діяльність.

Важливими є вихідні положення та ключові принципи методики “*My Dao*”:

- принцип нейтральності;
- принцип рівної позиції;
- принцип єдності рішення і дії.

Мета “My Dao”: дослідження самооцінки та мотивації учасників, розкриття їх особистісних ресурсів для вирішення проблем і подальшого розвитку.

Цільова група “My Dao”: розрахована на клієнтів з досить широким віковим діапазоном – від молоді (з 17 років) до людей похилого віку, а також широким спектром глибинних особистісних проблем учасників. Може використовуватися для осіб у неклінічній та клінічній психотерапії.

Інструментарій “My Dao”:

- 1) 12 фігурок, тварини-символи;
- 2) 108 карток-картин;
- 3) 36 карток-стимулів;



4) ігровий кубик;

5) ігрове поле.

Хід гри “Му Dao” поділяється на три етапи: підготовчий, основний, заключний.

Підготовчий етап. Ведучий проводить інструктаж учасників, знайомить їх з правилами гри, метою гри, проводить жеребкування тощо.

Основний етап. Гравці по черзі кидають кубик, роблять хід на певну кількість пунктів. Беруть з певного стовпчика картку-картину та описують свої асоціації, котрі викликає у них ця картка, а також відповідають на питання ведучого і учасників, якщо такі є. Після відповіді гравці беруть картку-мотиватор та відповідають на питання ведучого.

Учасники проходять через всі три сектори: спочатку жовтий (гра), потім зелений (навчання) та червоний (праця). Вони роблять наступні ходи, при цьому описують асоціації отриманих карток-картин та отриманих/обраних карток-мотиваторів.

Заключний етап. Підбиття підсумків учасниками та ведучим. Учасники аналізують свої життєві здобутки, асоціюючи їх з накопиченими за гру картками.

Для перевірки ефективності трансформаційної психологічної гри “Му Dao” нами застосована методика діагностики ціннісних орієнтацій Ш. Шварца (адаптація В. Карандашева), що використовується для дослідження динаміки зміни цінностей у групах і особистості у зв’язку з її життєвими проблемами (Karandashev, 2004). В основі опитувальника лежить теорія, згідно якої всі цінності поділяються на суспільні (культурно-ціннісні орієнтації) та індивідуальні. Респонденту пропонувалося оцінити ступінь важливості кожної цінності як домінуючого принципу його життя у балах. Чим вищий бал, тим важливішою для нього є ця цінність.

Наведемо коротке визначення типів ціннісних орієнтацій відповідно до їхньої центральної мети за Ш. Шварцем:

- влада – соціальний статус, домінування над людьми і ресурсами;

- досягнення – особистий успіх в відповідно до соціальних стандартів;

- гедонізм – насолода або чуттєве задоволення;

- стимуляція – хвилювання і новизна;

- самостійність – самостійність думки і дії;

- універсалізм – розуміння, терпимість і захист благополуччя всіх людей та природи;



- доброта – збереження і підвищення добробуту близьких людей;
- традиція – повага і відповідальність за культурні, релігійні звичаї та ідеї;
- конформність – стримування дій та мотивів, які можуть зашкодити іншим і не відповідають соціальним очікуванням;
- безпека – безпека, стабільність суспільства, відносин та самого себе.

Для дослідження ми обрали групу, яку склали клієнти до та після проходження психологічної трансформаційної гри “Му Dao” – 134 особи, серед них 75 чоловіків (55.97%) та 59 жінок (44.03%) віком 17-35 років (учні старших класів, студенти, працівники). Контрольна група була в кількості 126 осіб, серед них 69 чоловіків (54.76%) та 57 жінок (45.24%) віком 18-30 років (переважно студенти вишів).

Внаслідок вивчення особливостей цінностей за методикою Ш. Шварца виявлено середні показники цінностей у балах між досліджуваною (до і після гри) і контрольною групами.

Найбільш вираженими в досліджуваній групі на рівні нормативних ідеалів особистості до гри є цінності доброти, гедонізму та комфортності. Ці показники характеризують особистість, для якої важливою є лояльність, поблажливість, задоволення, насолода життям, слухняність, самодисципліна, ввічливість, повага до батьків і старших. Після проходження гри ці показники знизились. В той же час, потрібно відзначити найбільш суттєву динаміку деяких показників в процесі гри. Відбулося збільшення показників безпеки з 4.4 до 5.8 балів ($p < 0.05$), що говорить про зростання ролі гармонії та стабільності. Також помітно зменшення ролі традиції з 6.2 до 5.3 балів, універсалізму з 6.6 до 5.9 балів та гедонізму з 6.9 до 6.2 балів ($p < 0.05$), що говорить про знецінення смиренності, прийняття своєї долі після участі в грі.

Для контрольної групи найбільш суттєвими бали такі цінності: доброта, конформність та самостійність, що відповідає таким якостям, як чесність, відповідальність, дружба, самодисципліна, ввічливість, самоконтроль і самоврядування.

На індивідуальному рівні в досліджуваній групі в процесі гри спостерігається збільшення гедонізму, влади та стимуляції, що свідчить про те, що для них збільшилась роль задоволення, успішності, амбітності, прагнення до новизни та глибоких переживань.

В той же час високі показники після гри універсалізму, гедонізму, самостійності та конформності свідчать про зростання розуміння, терпимості, насолоди життям, самоконтролю,



самоврядування, самодисципліни та ввічливості. Індивідуальний рівень особистості контрольної групи теж характеризується високими показниками самостійності та універсальності.

Отже, найбільша значущість впливу розробленої психологічної трансформаційної гри “Му Dao” на клієнта за методикою діагностики ціннісних орієнтацій Ш. Шварца спостерігається на рівні нормативних ідеалів (безпека, традиція, гедонізм та універсальність), що свідчить про певну зміну їх у бік збільшення гармонії і стабільності, зменшення смиренності, прийняття своєї долі, задоволення, насолоди життям, розуміння і терпимості. На рівні індивідуальних пріоритетів спостерігається збільшення гедонізму, влади та стимуляції.

Таким чином, для психолога трансформаційна гра приваблива тому, що вона допомагає у встановленні контакту, безпосередньо працює з підсвідомим, дозволяє усвідомити, відчути і вербалізувати актуальні, хвилюючі проблеми та виробляє нові варіанти їх вирішення. В той же час для клієнта психологічна гра важлива тому, що дозволяє краще розуміти себе і свої цінності, розібратися в своїх проблемах, допомагає у досягненні важливої життєвої або професійної мети, зміцнює взаємини з оточенням, є методом релаксації, приємного проведення часу та альтернативного відпочинку.

Висновки:

Розроблена психологічна трансформаційна гра “Му Dao” спрямована на зміну самооцінки і мотивації учасників, розкриття їхніх особистісних ресурсів для вирішення проблем і подальшого розвитку. Ця методика є достатньо універсальною за віковою категорією учасників і за можливістю вирішення психологічних проблем.

Найбільша значущість впливу розробленої психологічної трансформаційної гри “Му Dao” на клієнта за методикою діагностики ціннісних орієнтацій Ш. Шварца спостерігається на рівні нормативних ідеалів, таких як традиція, конформність, безпека, гедонізм та універсальність, що свідчить про певну зміну їх у бік збільшення гармонії і стабільності, а також зменшення смиренності, прийняття своєї долі. На рівні індивідуальних пріоритетів спостерігається збільшення гедонізму, влади та стимуляції, що свідчить про зростання ролі задоволення, успішності, амбітності, прагнення до новизни та глибоких переживань. В той же час високі показники після гри універсальності, гедонізму, самостійності та конформності вказують на зростання розуміння, терпимості, насолоди життям, самоконтролю, самоврядування, самодисципліни та ввічливості. Тоді як індивідуальний рівень особистості контрольної групи



характеризується переважно відносно високими показниками самостійності та універсализму.

Перспективними є дослідження психологічної трансформаційної гри “Му Dao” серед осіб похилого віку та учасників з різними психологічними проблемами, а також її апробація в клінічній психотерапії.

Conflicts of interests:

The authors declare that there is no conflict of interests.

Source of support:

This research did not receive any outside funding or support.

References

- Berne, E. (2016). *Games people play: The psychology of human relationships*. Penguin Life. (Reprinted from *Games people play: The psychology of human relationships* (1st ed.), by E. Berne, 1964, Grove Press).
https://rrt2.neostrada.pl/mioduszezewska/course_2643_reading_3.pdf
- Cherevko, A. P. (2006). Igra: sushnost, funktsii i disfunktsii [Play: Essence, Function and Dysfunction]. *Vologdinskie chteniya – Vologda Readings*, 59, 43–45. <https://cyberleninka.ru/article/n/igra-suschnost-funktsii-i-disfunktsii> [in Russian]
- Faerman, M. I. (2020). Transformacionnaja igra kak uchebnaja psihotehnologija [Transformational Play as Educational Psychotechnology]. In E. V. Bukshina (Ed.), *Konsultativnaja psihologija: vyzovy praktiki – Counseling Psychology: Challenges of Practice* (pp. 245–247). <https://doi.org/10.24411/9999-055A-2020-00059> [in Russian]
- Fink, E. (2016). *Osnovnye fenomeny chelovecheskogo bytiya [The Basic Phenomena of Human Existence]*. Kanon. <https://www.koob.ru/fink/> [in Russian]
- Frissen, V., Lammes, S., de Lange, M., de Mul, J., & Raessens, J. (2015). Homo ludens 2.0: Play, media, and identity. In V. Frissen (Ed.), *Playful Identities: The Ludification of Digital Media Cultures* (pp. 9–50). Amsterdam University Press.
<https://doi.org/10.1515/9789048523030-001>
- Guzik, M. A. (2012) *Igra kak fenomen kultury [Game as a Cultural Phenomenon]*. Flinta. <https://unotices.com/books-u/156745> [in Russian]
- Heckhausen, H. (1977). Achievement motivation and its constructs: A cognitive model. *Motivation and Emotion*, 1, 283–329.



- <https://doi.org/10.1007/BF00992538>
- Huizinga, J. (2016). *Homo ludens: A study of the play-element in culture*. Angelico Press. (Reprinted from *Homo ludens: proeve eener bepaling van het spel-element der cultuur* (1st ed.), by J. Huizinga, 1938, The Beacon Press).
<https://bibliodiarq.files.wordpress.com/2014/06/huizinga-j-homo-ludens.pdf>
- Karandashev, V. N. (2004). *Metodika Shvarca dlja izuchenija cennostej lichnosti [Schwartz methodology for the study of values personality]*. Rech. <https://altairbook.com/go2/2173160.html> [in Russian]
- Lewin, K. (n.d.). *Field theory in social science*. Harper & Brothers. <https://ia802905.us.archive.org/4/items/in.ernet.dli.2015.138989/2015.138989.Field-Theory-In-Social-Science-Selected-Theoretical-Oaoers.pdf>
- Melnyk, Yu. B. (2004). Osoblyvosti formuvannia kultury zdorovia: model kultury zdorovia osobystosti uchnia [Features of the formation of a health culture: a model of the health culture of the learner's personality]. *Pedagogics, Psychology, Medicalbiological Problems of Physical Training and Sports*, 11, 37–46. [in Ukrainian]
<https://www.sportpedagogy.org.ua/html/Pedagogy/Pdf2004/PD-2004-11.pdf#page=38>
- Melnyk, Yu., & Stadnik, A. (2018a). Mental health of a personality: Diagnostics and prevention of mental disorders. *International Journal of Education and Science*, 1(3-4), 50. <https://doi.org/10.26697/ijes.2018.3-4.37>
- Melnyk, Yu., & Stadnik, A. (2018b). *Psykhologichna transformatsiina hra "My Dao" [Psychological transformation game "My Dao"]*. KRPOCH.
<https://doi.org/10.26697/ari.krepoch/melnyk.stadnik.1.2018>
- Melnyk, Yu. B., Stadnik, A. V., & Pypenko, I. S. (2020). Resistance to post-traumatic stress reactions of vulnerable groups engaged in pandemic liquidation. *International Journal of Science Annals*, 3(1), 35–44 <https://doi.org/10.26697/ijsa.2020.1.5>
- Melnyk, Yu. (2017). Study of trends of students' demand for the formation of competences by higher educational institutions. *Science and Education*, 5, 128–134. <https://doi.org/10.24195/2414-4665-2017-5-22>
- Myers, D. G. (2009). *Social psychology* (10th ed.). The McGraw-Hill Companies.
https://diasmumpuni.files.wordpress.com/2018/02/david_g-_myers_social_psychology_10th_editionbookfi.pdf



Nicholson, S. (2015). A RECIPE for meaningful gamification. In T. Reiners & L. C. Wood (Eds.), *Gamification in Education and Business* (pp. 1-20). Springer. https://doi.org/10.1007/978-3-319-10208-5_1

Information about the authors:

Melnyk Yuriy Borysovych – <https://orcid.org/0000-0002-8527-4638>; Doctor of Philosophy in Pedagogy, Associate Professor; Founder and Chairman of the Board, Kharkiv Regional Public Organization “Culture of Health” (KRPOCH); Director, Scientific Research Institute KRPOCH, Kharkiv, Ukraine.

Research interests: education, psychology, psychological technology, culture of health.

Stadnik Anatoliy Volodymyrovych – <https://orcid.org/0000-0002-1472-4224>; Doctor of Philosophy in Medicine, Associate Professor, Kharkiv National University of Internal Affairs; Director, Social-Psychological Center KRPOCH, Kharkiv, Ukraine.

Research interests: education, psychology, medicine, psychiatry.

Cite this article as:

Melnyk, Yu. B., & Stadnik, A. V. (2021). Psyholohichna transformatsiina hra “My Dao” yak efektyvnyi metod roboty psykhologa [Psychological transformation game “My Dao” as an effective method of psychologist practice]. In Yu. B. Melnyk, & L. M. Georgieva (Eds.), *Current Issues of Education and Science. 9th International Conference, CIES-2021, Riga, Latvia – Kharkiv, Ukraine, November 10–13, 2021, Conference proceedings* (pp. 52–65). KRPOCH. <https://doi.org/10.26697/9786177089147.2021.07> [in Ukrainian]

Copyright information:



The published paper are licensed under a Creative Commons “Attribution” 4.0 Worldwide



The electronic version of this article is complete. Full or partial reproduction of article is allowed, citing to the source, author(s) and DOI. An electronic copy of the Conference proceedings in open access is available via the KRPOCH Publishing website <https://publisher.culturehealth.org>



Current Issues of Education and Science, 2021
Conference proceedings. ISBN: 978-617-7089-14-7
<https://doi.org/10.26697/9786177089147.2021>
PSYCHOLOGY



DOI: <https://doi.org/10.26697/9786177089147.2021.08>

Social Emotional Learning During COVID-19

Hakan USAKLI¹ 

¹ Sinop University, Turkey

Corresponding Author Details

Hakan USAKLI, husakli@yahoo.com

Received: 30.09.2021; Accepted: 28.10.2021; Published: 17.12.2021

Brief Summary

Background: Due to the COVID-19 pandemic people are jailed in their homes. Students are getting their formal education via online. Youths are forbidden to go outside, and they are unable to meet their meets. Perhaps cognitive development could be conduct with internet, but what about the emotional development. Could kids play with their friends with the help of computers. Socialization process occurs first in family then in schools and play gardens. The most negative effect occurred during COVID-19 perhaps the socialization of kids.

The aim of the study: To analyze those children books related with social emotional learning.

Methods: Qualitative research method was used in this study. Related documents were examined. There are 17 children's books that are known in child literature given in terms of writer, name, publication year, total pages, and summary.

Results: In this paper the usefulness of bibliotherapy argued. Some kid books which are highly effective social emotional learning skills for kids are introduced. Those books are selected from Kind Curriculum developed by Healthy Minds Association.

Conclusions: Those introduced books highly recommended for parents can be read aloof to children during COVID-19 in home setting. Those books also as part of social emotional learning curriculum subject it can be useful for pre-garden and early elementary years students' teacher.



Teachers also utilize these books in their face-to-face lessons or online courses.

Keywords:

pre-garden students, early elementary students, social emotional learning, kid books, socialization.

Background:

COVID-19, which started in China and spread all over the world in a short time, like a nightmare, affected all people negatively. Hundreds of people have been dying and thousands of people also have been suffering this illness in most miserable health conditions. More than one-year people are jailed in their homes. Students cannot go to the school, so all instructions conducted via internet.

Basically, socialization is a general term for the many ways and processes by which children come to be able to function as members of their social community. It is in part a process of learning and in part a process of being taught, but modern views of socialization also stress the active role of children in making sense of their social world and constructing their own ways of being part of their social group (The Open University, 2019). Socialization is strongly connected to developmental psychology. Humans need social experiences to learn their culture and to survive (Macionis & Gerber, 2011).

Social and emotional learning (SEL) is the process through which children and adults acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set, and achieve positive goals, feel, and show empathy for others, establish, and maintain positive relationships, and make responsible decisions (CASEL, 2021).

SEL is a methodology that helps students of all ages to better comprehend their emotions, to feel those emotions fully, and demonstrate empathy for others. These learned behaviors are then used to help students make positive, responsible decisions; create frameworks to achieve their goals, and build positive relationships with others.

SEL process which children:

- develop awareness and management of their emotions;
- set and achieve important personal and academic goals;
- use social awareness skills and interpersonal skills to establish and maintain positive relationships;
- demonstrate decision-making and responsible behaviors to achieve success in school and life (Parrikakou & Weissberg, 2007, p. 50).

The five social emotional learning competencies:



Self-awareness – To recognize your emotions and how they impact your behavior, acknowledging your strengths and weaknesses to better gain confidence in your abilities (Recognizing our emotions and values and being able to realistically assess our strengths and limitations).

Self-management – To take control and ownership of your thoughts, emotions, and actions in various situations, as well as setting and working toward goals (Being able to set and achieve goals and handling our emotions so that they facilitate rather than interfere with the task at hand).

Social awareness – The ability to put yourself in the shoes of another person who may be from a different background or culture from the one you grew up with. To act with empathy and in an ethical manner within your home, school, and community (Showing understanding and empathy for the thoughts and feelings of others).

Relationship skills – The ability to build and maintain healthy relationships with people from a diverse range of backgrounds. This competency focuses on listening to and being able to communicate with others, peacefully resolving conflict, and knowing when to ask for or offer help (Establishing and maintaining health relationships, working effectively in groups, and dealing constructively with conflict).

Making responsible decisions – Choosing how to act or respond to a situation based on learned behaviors such as ethics, safety, weighing consequences and the well-being of others, as well as yourself (Making ethical, constructive choices about personal and social behavior).

A responsive classroom is an evidence-based method to teaching and training that concentrates on retaining academics, actual community, active administration, and developmental consciousness. Expert construction, books, and supplies help elementary and middle school teachers to design secure, cheery, and pleasant classrooms and school centers where students acquire great social and scholastic abilities, and each student can succeed.

Connor (2020) connected a search on bring SEL to life for young students through picture books. She summarizes the results of this research like this:

Beginning elementary pupils are presently starting to discover the social and emotional skills that will lead them within life and approximately every cooperation can be an occasion to exercise. In extension to presenting specific preparation in social and emotional learning (SEL), scholars can strengthen these teachings within entertainment, interactive projects that approach the five core SEL competencies of collaboration, assertiveness, responsibility, empathy, and self-control (CARES).

Nearly like SEL are communication abilities, which kids at this stage are also quickly expanding. The conversation trades they receive within



communication arts are how they will display their social and emotional learning to society. Essence children's publications can be an excellent way to strengthen SEL within a current communication techniques curriculum (see, for example, Harper, 2016; Moore, 2018; Plucker, 2019).

The aim of the study. To analyze those children books related with social emotional learning. Social emotional learning is very important process which only gain in family and school. These COVID-19 time children must stay at their home. So, there should be immediate cure for how kids could gain emotional capacity.

Methods:

Qualitative research relies on data obtained by the researcher from first-hand observation, interviews, questionnaires, focus groups, participant-observation, recordings made in natural settings, documents, and artifacts. The data are generally nonnumerical. Qualitative methods include ethnography, grounded theory, discourse analysis, and interpretative phenomenological analysis (Creswell & Guetterman, 2021). Document analysis is a form of qualitative research in which documents are interpreted by the researcher to give voice and meaning around an assessment topic (Bowen, 2009).

Results:

17 kid books investigated in this study.

“All of Me! A Book of Thanks”. This book written by Molly Bang and published by Blu Sky in 2009. There are 40 pages in the book. A young child who is thankful for the world around him/her.

“What’s My Job?” This book written by Lyn Calder and illustrated by Paul and Alice Sharp in 2000 and published by Scholastic. The book is 32 pages. The author gives some clues about vocations and asks to kid to find out the job.

“I’m the best”. This book written and illustrated by Lucy Cousins and published by Walker Books Ltd. In 2010. The book is 32 pages. “I win! I’m the best!” Dog boasts. He can run faster than Mole, dig better than Goose, swim faster than Donkey, and he’s much bigger than Ladybug.

“In My World”. This book written by Lois Ehlert and published by HMH Books for Young Readers in 2002. The book is 36 pages. Creeping bugs and wiggling worms, splashing rain and glittering stars – nobody notices the details of the world around them more than children and artists.

“Hey, Little Ant”. This book written by Phillip Hoose and Hannah Hoose and illustrated by Debbie Tilley. The book published by Treyle Press in 1998 and 32 pages. What would you do if the ant you were about to step



on looked up and started talking? Would you stop and listen? What if your friends saw you hesitate?

“Dogger”. This book written by Shirley Huges. It was first published in 1977. In 1993 published by Harper Trophy. The book is containing 32 pages. An enduring classic about how a little boy’s stuffed dog is lost and found again.

“Can You Say Peace?” This book written by Karen Katz. Published by Henry Holt and Co. in 2006. The book is 32 pages. International Peace Day is September 21. On this day and every day throughout the year, children all over the world wish for peace.

“Moody Cow Learns Compassion”. This book written by Kerry Lee Maclean. The book published by Wisdom Publications in 2012. There are 32 pages in the book. This delightful sequel to Moody Cow Meditates reintroduces us to Peter (aka Moody Cow) and meet his mischievous “boys-will-be-boys” friend Bully.

“When Sophie Gets Angry – Really, Really Angry”. This book written by Molly Bang and published by Blue Sky Press in 1999. There are 32 pages in the book. Everybody gets angry sometimes. For children, anger can be very upsetting. Parents, teachers, and children can talk about it.

“Garcias/Thanks”. This book written by Pat Mora and illustrated by John Parra. 32 pages of the book published by Lee & Low Books in 2005. A young multiracial boy celebrates family, friendship, and fun by telling about some of the everyday things for which he is thankful.

“How Kind!” This book written by Mary Murphy. Published by Candlewick Press in 2004. The book is 24 pages. He gives Pig an unexpected present. “How kind!” says Pig. Pig is so touched, in fact, that he decides to do something kind too. So, Pig gives Rabbit a gift. “How kind!” says Rabbit, who does something kind for...

“Sumi’s First Day of School Ever”. This book written by Soyung Pak and illustrated by Joung Un Kim. The book published by Viking Books for Young Readers in 2003 and contains 32 pages. The first day of school can be lonely and scary, especially when you don’t speak the same language as everyone else.

“Down the Road”. This book written by Alice Schertle and illustrated by E. B. Lewis. The book published by HMH Books for Young Readers in 1995 contains 40 pages. Mama and Papa agree that eggs for breakfast would be nice, but they’re too busy to go to the store.

“The Listening Walk”. This book written by Paul Showers and illustrated by Alike. The book first published by Harper Collins in 1961. There are 32 pages in the book. Put on your socks and shoes – and don’t forget your ears! We’re going on a listening walk.



“Somewhere Today: A Book of Peace”. This book written by Shelley Moore Thomas. It published by Albert Whitman Company in 1998. The book is 24 pages long. Somewhere in the world each day, people just like you are acting in kind, peaceful, loving ways.

“Quick as a Cricket”. This book written by Audrey Wood and illustrated by Don Wood. Child’s Play International published in 2001 this book. There are 32 pages in the book. A celebration of a child’s growing self-awareness, and a prime example of how books can contribute to this.

“A Quiet Place”. This book written by Douglas Wood and illustrated by Dan Andreasen. The publisher of the book is Simon & Schuster Books for Young Readers and published in 2014. There are 32 pages in the book. A place that’s far away from the hustle and bustle of everyday life. Figure 1 illustrates kids’ books related with social emotional learning.

Figure 1
Kids’ Books Related with Social Emotional Learning



Conclusions:

The introductory article to this special edition of School Psychology International, “Using Children’s Literature to Strengthen Social and Emotional Learning,” describes the need for a broader base of support for



children's mental health needs. Both nationally and internationally, the limited number of mental health professionals demands alternative options for the delivery of mental health services. Schools are recommended as one proposed venue for providing these services to children and youth. From the mental health perspective of both prevention and intervention, bibliotherapy is proposed not just as a professional's therapeutic tool, but also as a layman's resource to address students' basic social emotional needs. We offer resources from a website that includes basic bibliotherapy lesson plans, posters, activities, and video clips – all centered on the five foundational competencies identified by the Collaborative for Academic, Social, and Emotional Learning (CASEL). This website is geared to educators and mental health professionals who work with elementary school children, ages 5–11 (Heath et al., 2017).

For children this means that socialization experiences will be directed at developing different kinds of social knowledge and self-regulation abilities in different social and cultural settings. A challenge for social development researchers is to expand the scope of their studies to examine the array of settings around the world in where children spend their time in which they develop and practice novel social behaviors.

Social emotional learning is very important for kids. Due to the COVID-19 pandemic times students must stay at their home. Parents should be bear in mind that they can teach emotional aspects of social life to their siblings. Like in Connor (2020) study this manuscript offset some kid books for social emotional learning for the use of parents. Those books selected from Center of Health Minds – University of Wisconsin-Madison (2017). There are 17 kid books available for social emotional learning.

Conflicts of interests:

The author declares that there is no conflict of interests.

Source of support:

This research did not receive any outside funding or support.

References

- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27–40. <https://doi.org/10.3316/QRJ0902027>
- CASEL. (2021). *Fundamentals of SEL*. <https://casel.org/overview-sel/>
- Center of Healthy Minds – University of Wisconsin-Madison. (2017). *A mindfulness-based kindness curriculum for preschoolers*. <https://centerhealthyminds.org/join-the-movement/sign-up-to-receive-the-kindness-curriculum>



- Connor, R. (2020). Bring SEL to life for young students through picture books. *Literacy and SEL*.
<https://www.crslearn.org/publication/february-2020-literacy-and-sel/bring-sel-to-life-for-young-students-through-picture-books/>
- Creswell, J., & Guetterman, T. (2019). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (6th ed.). Pearson.
- Harper, L. J. (2016). Preschool through primary grades: Using picture books to promote social-emotional literacy. *YC Young Children*, 71(3), 80–86. <https://www.jstor.org/stable/yicyoungchildren.71.3.80>
- Heath, M. A., Smith, K. & Young, E. L. (2017). Using children’s literature to strengthen social and emotional learning. *School Psychology International*, 38(5), 541–561.
<https://doi.org/10.1177/0143034317710070>
- Macionis, J. J., & Gerber, L. M. (2011). *Sociology* (7th ed.). Pearson.
- McHale, S., Dariotis, J., & Kauh, T. (2003). Social development and social relationships in middle childhood. In T. Millon, M. Lerner, & I. Weigner (Eds.), *Handbook of Psychology*. John Wiley & Sons, Inc. <https://doi.org/10.1002/0471264385.wei0610>
- Moore, M. (2018, November 9). *Integrating social and emotional learning in the classroom*. International Literacy Association.
<https://www.literacyworldwide.org/blog/literacy-daily/2018/11/09/integrating-social-and-emotional-learning-in-the-classroom/>
- Patrikakou, E. N., & Weissberg, R. P. (2007). School-family partnerships to enhance children’s social, emotional, and academic learning. In R. Bar-On, K. Maree, & M. Elias (Eds.), *Educating People to Be Emotionally Intelligent*. Praeger.
- Plucker, J. M. (2019, April 29). *Fostering social-emotional learning through literacy*. Mackin Community.
<https://www.mackincommunity.com/2019/04/29/fostering-social-emotional-learning-through-literacy/>
- The Open University. (2019, August 30). *What is socialisation? The one minute guide*. OpenLearn. <https://www.open.edu/openlearn/body-mind/childhood-youth/childhood-and-youth-studies/childhood/what-socialisation>

Information about the author:

Usakli Hakan – <https://orcid.org/0000-0003-4307-2226>; Doctor of Pedagogical Sciences, Full Time Professor, Faculty of Education, Sinop University, Sinop, Turkey.



Research interests: psychology, education, psychodrama, guidance and counseling.

Cite this article as:

Usakli, H. (2021). Social emotional learning during COVID-19. In Yu. B. Melnyk, & L. M. Georgieva (Eds.), *Current Issues of Education and Science. 9th International Conference, CIES-2021, Riga, Latvia – Kharkiv, Ukraine, November 10–13, 2021, Conference proceedings* (pp. 66–74). KRPOCH. <https://doi.org/10.26697/9786177089147.2021.08>

Copyright information:



The published paper are licensed under a Creative Commons “Attribution” 4.0 Worldwide



The electronic version of this article is complete. Full or partial reproduction of article is allowed, citing to the source, author(s) and DOI. An electronic copy of the Conference proceedings in open access is available via the KRPOCH Publishing website <https://publisher.culturehealth.org>









Current Issues of Education and Science, 2021
Conference proceedings. ISBN: 978-617-7089-14-7
<https://doi.org/10.26697/9786177089147.2021>
HEALTH CARE SCIENCE



DOI: <https://doi.org/10.26697/9786177089147.2021.09>

Biliary Decompression in Patients with Obstructive Jaundice

Valeriy V. BOYKO^{1,2} , Yuriy V. AVDOSYEV¹ ,
Anastasiia L. SOCHNIEVA² , Denys O. YEVTUSHENKO² ,
Dmytro V. MINUKHIN² , Oleksandr M. SHEVCHENKO² 

¹ State Institution “V. T. Zaitsev Institute of General and Urgent Surgery
of the National Academy of Medical Sciences of Ukraine”, Ukraine
² Kharkiv National Medical University, Ukraine

Corresponding Author Details

Denys O. YEVTUSHENKO, dr.yevtushenko@ukr.net

Received: 14.09.2021; Accepted: 17.10.2021; Published: 17.12.2021

Brief Summary

Background: Benign and malignant diseases of bile ducts usually cause mechanical jaundice.

The aim of the study: To determine the optimal duration of percutaneous transhepatic biliary drainage (PTBD) depending on the duration of mechanical jaundice and the initial level of total bilirubin in the serum.

Methods: This paper presents the experience of using PTBD in 88 patients with benign and malignant diseases of bile ducts complicated by mechanical jaundice, who were hospitalized at the State Institution “V. T. Zaitsev Institute of General and Urgent Surgery of the National Academy of Medical Sciences of Ukraine” from 2011 to 2017 years. Patients were divided into three groups. The first group consisted of 15 (17.1%) patients with benign diseases of the biliary tract. The second group consisted of 11 (12.5%) patients with resectable cholangiocarcinomas. The third group – 62 (70.4%) patients with unresectable cholangiocarcinomas.

Results: For patients of group 1, the process is somewhat slower, but the end result is also quite strongly influenced by the initial level of total bilirubin. The duration of biliary decompression in this category of patients



averages 10-12 days. For patients in group 2, biliary decompression requires at least 12 days, but the result is not significantly affected by the initial level of total bilirubin and the duration of obstructive jaundice.

Conclusions: Using the Poisson process, or more precisely the quasi-Poisson distribution, it was possible to determine the optimal duration of biliary decompression by using PTBD depending on the duration of obstructive jaundice and the initial level of total serum bilirubin.

Keywords:

bile duct diseases, obstructive jaundice, biliary decompression, percutaneous transhepatic biliary drainage, Poisson process.

Background:

Benign and malignant diseases of bile ducts usually cause mechanical jaundice (Renknimitr et al., 2013). The latest one should be eliminated in cases where the patient subsequently requires reconstructive surgery and in cases where biliary decompression is the only stage of treatment, especially in patients with high anesthesia risk and severe comorbidities (Moole et al., 2013; Oussoultzoglou & Jaeck, 2008). Difficulties in performing biliary decompression occur in patients with proximal bile duct block and in some cases with distal block. Percutaneous transhepatic methods of biliary decompression allow you to perform drainage of the bile ducts antegradely. However, there is no consensus on the duration of biliary drainage (Galperin et al., 2011; Momunova, 2011; Paik et al., 2014).

The aim of the study. To determine the optimal duration of percutaneous transhepatic biliary drainage (PTBD) depending on the duration of mechanical jaundice and the initial level of total bilirubin in the serum.

Methods:

This paper presents the experience of using PTBD in 88 patients with benign and malignant diseases of bile ducts complicated by mechanical jaundice, who were hospitalized at the State Institution “V. T. Zaitsev Institute of General and Urgent Surgery of the National Academy of Medical Sciences of Ukraine” from 2011 to 2017 years.

Patients were divided into three groups. The first (1) group consisted of 15 (17.1%) patients with benign diseases of the biliary tract. The causes of mechanical jaundice in patients of group 1 were choledocholithiasis in 6



(6.8%), strictures of the biliary tract in 2 (2.3%) and strictures of biliodigestive anastomoses in 7 (8.0%). The second (2) group consisted of 11 (12.5%) patients with resectable cholangiocarcinomas. The third (3) group – 62 (70.4%) patients with unresectable cholangiocarcinomas.

The level of total bilirubin when there ranged from 26.2 to 824 $\mu\text{mol/l}$. The median level of total bilirubin was 252 $\mu\text{mol/l}$. The average deviation was 15.6 $\mu\text{mol/l}$, the standard deviation was 169 $\mu\text{mol/l}$.

The duration of cholestasis was determined according to the Simonov's classification (Smirnov, 1974) – acute in 38 (43.2%), prolonged acute – 11 (12.5%), chronic – 39 (44.3%).

Patients were divided in terms of total bilirubin serum: <150 $\mu\text{mol/l}$ – 14 (15.9%) [150-250) $\mu\text{mol/l}$ – 20 (22.7%) [250-400) $\mu\text{mol/l}$ – 28 (31.8%) and more >= 400 $\mu\text{mol/l}$ – 26 (29.6%) patients.

The optimal duration of decompression of the biliary tract by PTBD was determined using the Poisson process, and more precisely – the distribution of quasi-Poisson, which reflects the process of reducing total bilirubin level in time (Ponarin et al., 2013; Shitikov & Mastickij, 2017; Warner, 2015).

Statistical processing of digital data was performed on a personal computer using Excel 2010, SPSS and free software for statistical calculations R (Kabacoff, 2011).

Results:

For patients with benign bile duct disease complicated by obstructive jaundice (1 group) who underwent antegrade endobiliary interventions as biliary decompression, total bilirubin decreased in time as follows: the average value of total bilirubin before biliary decompression was 267.9 $\mu\text{mol/l}$, after treatment – 139 $\mu\text{mol/l}$. The arithmetic mean of the difference is 128.7 $\mu\text{mol/l}$ ($p = 0.001$). Direct bilirubin decreased from 182.84 $\mu\text{mol/l}$ to 87.55 $\mu\text{mol/l}$ and the arithmetic mean difference is 95.3 $\mu\text{mol/l}$ ($p = 0.001$). But the rate of decrease in total and direct bilirubin is not linear, because on the first day in most cases the level of bilirubin decreases significantly, and then the process slows down.

In this case, the rate of decrease depends on the duration of obstructive jaundice: the rate is higher if obstructive jaundice is acute, while obstructive jaundice is prolonged acute - the rate of decrease in bilirubin is lower, as well as the initial level of total bilirubin: at the level of bilirubin [250-400) $\mu\text{mol/l}$ rate of decrease greater than at its level <150 $\mu\text{mol/l}$. Therefore, to determine the dependence of the value of total bilirubin after biliary decompression on the number of days, the duration of obstructive



jaundice and the initial level of total bilirubin used a nonlinear and logarithmic function.

On average, patients in group 1 with chronic obstructive jaundice with a total bilirubin level $<150 \mu\text{mol/l}$, the final level is $25.4 \mu\text{mol/l}$. Every day the total bilirubin will decrease by 10% compared to the previous one. That is, the reduction of total bilirubin to this value, if at the beginning it was $<150 \mu\text{mol/l}$, occurs in about 14 days.

If the patient's total bilirubin level is $(150-250) \mu\text{mol/l}$ in chronic obstructive jaundice, the final total bilirubin will be $38.13 \mu\text{mol/l}$ for the same period as for patients with a level of $<150 \mu\text{mol/l}$. If the level of total bilirubin in patients is $(250-400) \mu\text{mol/l}$, the average value at the end of the same period after PTBD will be $63.55 \mu\text{mol/l}$, and at its level $\geq 400 \mu\text{mol/l} - 101.68 \mu\text{mol/l}$.

For patients with acute obstructive jaundice, total bilirubin after PTBD is slightly higher than for patients with its level $<150 \mu\text{mol/l}$ ($26.18 \mu\text{mol/l}$), while for patients with acute obstructive jaundice is slightly lower ($16.12 \mu\text{mol/l}$). But in principle, the rate of decline depending on the duration of the obstructive jaundice does not differ. The process of reducing direct bilirubin is the same as the total. Thus, based on the analysis, the duration of biliary decompression was calculated, which is optimal for patients with benign bile duct diseases complicated by obstructive jaundice using PTBD (group 1). For such patients, the average duration of biliary decompression is 10-12 days, because regardless of the initial level of total bilirubin, the latter is reduced by an average of 10% per day.

Total bilirubin in patients of group 2, with resectable cholangiocarcinomas, during biliary decompression, decreased in time as follows: the average value of total bilirubin before treatment was $243 \mu\text{mol/l}$, after treatment – $78.56 \mu\text{mol/l}$. The arithmetic mean of the difference is $164.26 \mu\text{mol/l}$ and the difference are significant at the level ($p = 0.001$). Direct bilirubin decreased from $172.76 \mu\text{mol/l}$ to $44.22 \mu\text{mol/l}$ and the arithmetic mean difference is $128.55 \mu\text{mol/l}$ ($p = 0.001$).

If a patient has chronic obstructive jaundice with a total bilirubin level of $[150-250) \mu\text{mol/l}$, his figure will be $59.95 \mu\text{mol/l}$ for the same period (12 days) as for patients with a bilirubin level $<150 \mu\text{mol/l}$. If patients have a total bilirubin level $(250-400) \mu\text{mol/l}$, the average value after drainage will be $99.9 \mu\text{mol/l}$, and for patients with a bilirubin level greater than $\geq 400 \mu\text{mol/l} - 159.9 \mu\text{mol/l}$ for the same period. Therefore, the latter requires more days for drainage.

For patients with acute obstructive jaundice, the total bilirubin after PTBD is slightly higher than for patients with bilirubin up to $150 \mu\text{mol/l}$ ($8.76 \mu\text{mol/l}$), for patients with prolonged acute obstructive jaundice is



twice as high (16.03 $\mu\text{mol/l}$), The rate of decline for obstructive jaundice depending on its duration does not differ significantly. Therefore, when performing biliary decompression, the total bilirubin levels for each patient should be individually monitored. The process of reducing direct bilirubin is the same as the total, but its reduction is somewhat faster, but it is determined that the effect of the duration of obstructive jaundice and the initial level of total bilirubin is insignificant.

In patients of group 3, total bilirubin decreased in time as follows: the average value of total bilirubin before treatment was 324.17 $\mu\text{mol/l}$, after treatment – 240.42 $\mu\text{mol/l}$. The arithmetic mean of the difference is 83.75 $\mu\text{mol/l}$ and the difference are significant at the level ($p = 0.001$). Direct bilirubin decreased from 219.45 $\mu\text{mol/l}$ to 161.76 $\mu\text{mol/l}$ and the arithmetic mean difference is 62.67 $\mu\text{mol/l}$ ($p = 0.001$).

On average, patients in group 3 with chronic obstructive jaundice with a total bilirubin level $<150 \mu\text{mol/l}$, the final level is 19.03 $\mu\text{mol/l}$. Every day the bilirubin level will be lower by 13-14% than in the previous one. That is, the reduction of total bilirubin to this value, if at the beginning its level was $<150 \mu\text{mol/l}$ occurs in about 12 days.

If a patient has chronic obstructive jaundice with a total bilirubin level of [150-250) $\mu\text{mol/l}$, the final total bilirubin level will be 28.56 $\mu\text{mol/l}$ for the same period as for patients with a level of $<150 \mu\text{mol/l}$. If the level of total bilirubin in patients is (250-400) $\mu\text{mol/l}$, the average value at the end of cholangiodrainage will be 47.58 $\mu\text{mol/l}$, and when its level is more $> = 400 \mu\text{mol/l} - 76.13 \mu\text{mol/l}$ per 12 days. That is, patients with higher bilirubin levels need more days to achieve lower bilirubin levels.

For patients with acute obstructive jaundice, total bilirubin after PTBD is slightly lower than for patients with $<150 \mu\text{mol/l}$ (17.92 $\mu\text{mol/l}$), as well as for patients with prolonged acute obstructive jaundice (18.66 $\mu\text{mol/l}$). But in principle, the rate of decline depending on the duration of the obstructive jaundice does not differ. The process of reducing direct bilirubin is the same as the total.

Thus, based on the analysis, the duration of biliary decompression was calculated to reduce the level of total bilirubin, which is optimal for patients with unresectable cholangiocarcinomas by using PTBD (3 group). For such patients, the average duration of biliary decompression is 7 days, because regardless of on average, its indicators decrease by 13-14% per day. Thus, we can conclude that the fastest process of reducing the level of total bilirubin occurs in patients of the 3rd group. For such patients, an average of 8 days is enough to reduce total bilirubin to the required level, but the duration of biliary decompression significantly depends on its initial level per day, its indicators decrease.



For patients of group 1, the process is somewhat slower, but the end result is also quite strongly influenced by the initial level of total bilirubin. The duration of biliary decompression in this category of patients averages 10-12 days.

For patients in group 2, biliary decompression requires at least 12 days, but the result is not significantly affected by the initial level of total bilirubin and the duration of obstructive jaundice. These patients require constant monitoring of direct bilirubin.

Conclusions:

Using the Poisson process, or more precisely the quasi-Poisson distribution, it was possible to determine the optimal duration of biliary decompression by using PTBD depending on the duration of obstructive jaundice and the initial level of total serum bilirubin.

Conflicts of interests:

The authors declare that there is no conflict of interests.

Source of support:

This research did not receive any outside funding or support.

References

- Galperin, Je. I., Kotovsky, A. E., & Momunova, O. N. (2011). Optimalnyj uroven bilirubinemii pered vypolneniem operacij u bolnyh mehanicheskoj zheltuhoj opuholevoj jetiologii [The optimal preoperative bilirubinemia level in malignant obstructive jaundice patients]. *Annaly khirurgicheskoy gepatologii – Annals of HPB Surgery*, 1, 45–51. [in Russian] http://vidar.ru/Article.asp?fid=ASH_2011_1_45
- Kabacoff, R. I. (2011). *R in Action. Data Analysis and Graphics with R*. Manning.
- Moole, H., Bechtold, M., & Puli, S. R. (2016). Efficacy of preoperative biliary drainage in malignant obstructive jaundice: a meta-analysis and systematic review. *World Journal of Surgical Oncology*, 14(July), 182. <https://doi.org/10.1186/s12957-016-0933-2>
- Momunova, O. N. (2011). Predvaritelnaja dekompressija zhelchnyh protokov pri mehanicheskoj zheltuhoj opuholevoj jetiologii [Preliminary bile duct decompression in tumorous etiology obstructive jaundice]. *Annaly khirurgicheskoy gepatologii – Annals of HPB Surgery*, 2, 95–100. [in Russian] http://vidar.ru/Article.asp?fid=ASH_2011_2_95



- Oussoultzoglou, E., & Jaeck, D. (2008). Patent preparation before surgery for cholangiocarcinoma. *HPB*, 10(3), 150–153. <https://doi.org/10.1080/13651820801992559>
- Paik, W. H., Loganathan, N., & Hwang, J. H. (2014). Preoperative biliary drainage in hilar cholangiocarcinoma: When and how? *World Journal of Gastrointestinal Endoscopy*, 6(3), 68–73. <https://doi.org/10.4253/wjge.v6.i3.68>
- Ponarin, Je. D., Lisovskij, A. V., & Zelikova, Ju. A. (2013). Modeli dlja puassonovskih zavisimyh peremennyh: mozžno li prognozirovat rezultativnos futbolnyh matchej? [Poisson dependent variable models: can football performance be predicted?]. *Sociologija: metodologija, metody, matematicheskoe modelirovanie – Sociology: Methodology, Methods, Mathematical Modeling*, 36, 36–64. [in Russian] <https://publications.hse.ru/mirror/pubs/share/folder/jg8usuawyh/direct/105334869.pdf>
- Renknimitr, R., Angsuwatcharakon, P., Ratanachuek, T., Khor, C. J., Ponnudurai, R., Moon, J. H., Seo, D. W., Pantongrag-Brown, L., Sangchan, A., Pisespongsa, P., Akaraviputh, T., Reddy, N. D., Maydeo, A., Itoi, T., Pausawasdi, N., Punamiya, S., Attasaranya, S., Devereaux, B., Ramchandani, M., & Goh, K. L. (2013). Asia-Pacific consensus recommendations for endoscopic and interventional management of hilar cholangiocarcinoma. *Journal of Gastroenterology and Hepatology*, 28(4), 593–607. <https://doi.org/10.1111/jgh.12128>
- Shitikov, V. K., & Mastickij, S. Je. (2017). *Klassifikacija, regressija i drugie algoritmy Data Mining s ispolzovaniem R [Classification, regression and other algorithms of Data Mining using R]*. <https://github.com/ranalytics/data-mining> [in Russian]
- Smirnov, E. V. (1974). *Hirurgicheskie operacii na zhelchnyh putjah [Surgical operations on the biliary tract]*. Medgiz. [in Russian]
- Warner, P. (2015). Poisson regression. *Journal of Family Planning and Reproductive Health Care*, 41(3), 223–224. <https://doi.org/10.1136/jfprhc-2015-101262>

Information about the authors:

Boyko Valeriy Volodymyrovych – <https://orcid.org/0000-0002-3455-9705>; Doctor of Medical Sciences, MD, Professor, Head of the Department of Surgery No. 1, Kharkiv National Medical University; Director, State Institution “V. T. Zaitsev Institute of General and Urgent Surgery of the National Academy of Medical Sciences of Ukraine”, Kharkiv, Ukraine.

Research interests: surgery, education, medical sciences.



Avdosyev Yuriy Vladimirovich – <https://orcid.org/0000-0002-2677-4464>;
Doctor of Medical Sciences, MD, Professor, Head of the Department of
Interventional Radiology, State Institution “V. T. Zaitsev Institute of
General and Urgent Surgery of the National Academy of Medical Sciences
of Ukraine”, Kharkiv, Ukraine.

Research interests: surgery, education, medical sciences.

Sochnieva Anastasiia Lvovna – <https://orcid.org/0000-0003-0106-5247>;
Doctor of Philosophy in Medicine, Assistant Professor of the Department of
Surgery No. 1, Kharkiv National Medical University, Kharkiv, Ukraine.

Research interests: surgery, education, medical sciences.

Yevtushenko Denys Oleksandrovyh – <https://orcid.org/0000-0003-1941-7183>;
Doctor of Medical Sciences, MD, Professor, Professor of the
Department of Surgery No. 1, Kharkiv National Medical University,
Kharkiv, Ukraine. *Research interests:* surgery, education, medical sciences.

Minukhin Dmytro Valeriiovych – <https://orcid.org/0000-0003-3371-1178>;
Doctor of Philosophy in Medicine, Associate Professor, Associate Professor
of the Department of Surgery No. 1, Kharkiv National Medical University,
Kharkiv, Ukraine. *Research interests:* surgery, education, medical sciences.

Shevchenko Oleksandr Mykolaiovych – <https://orcid.org/0000-0002-1176-1687>;
Doctor of Philosophy in Medicine, Assistant Professor of the
Department of Surgery No. 1, Kharkiv National Medical University,
Kharkiv, Ukraine. *Research interests:* surgery, education, medical sciences.

Cite this article as:

Boyko, V. V., Avdosyev, Yu. V., Sochnieva, A. L., Yevtushenko, D. O.,
Minukhin, D. V., & Shevchenko, O. M. (2021). Biliary decompression in
patients with obstructive jaundice. In Yu. B. Melnyk, & L. M. Georgieva
(Eds.), *Current Issues of Education and Science. 9th International
Conference, CIES-2021, Riga, Latvia – Kharkiv, Ukraine, November 10–13,
2021, Conference proceedings* (pp. 75–82). KRPOCH.
<https://doi.org/10.26697/9786177089147.2021.09>

Copyright information:



The published paper are licensed under a Creative Commons
“Attribution” 4.0 Worldwide



The electronic version of this article is complete. Full or partial
reproduction of article is allowed, citing to the source, author(s) and
DOI. An electronic copy of the Conference proceedings in open
access is available via the KRPOCH Publishing website
<https://publisher.culturehealth.org>



Current Issues of Education and Science, 2021
Conference proceedings. ISBN: 978-617-7089-14-7
<https://doi.org/10.26697/9786177089147.2021>
HEALTH CARE SCIENCE



DOI: <https://doi.org/10.26697/9786177089147.2021.10>

Modern Endobronchial Methods in the Treatment of Chronic Lung Abscesses

Anton A. SERENKO¹, Vasilii G. HROMA^{1,2},
Dmytro V. MINUKHIN², Denys O. YEVTUSHENKO²

¹ State Institution "V. T. Zaitsev Institute of General and Urgent Surgery of the National Academy of Medical Sciences of Ukraine", Ukraine
² Kharkiv National Medical University, Ukraine

Corresponding Author Details

Denys O. YEVTUSHENKO, dr.yevtushenko@ukr.net

Received: 29.08.2021; Accepted: 21.09.2021; Published: 27.12.2021

Brief Summary

Background: The problem of treatment of chronic lung abscesses remains incomplete despite the achievements of modern medical science. There is a clear trend towards the spread of the number of patients with this pathology. One of the ways to improve the results of treatment of patients with chronic lung abscesses is to find new ways to treat this disease, in particular with the help of endobronchial methods of rehabilitation and correction of the activity of oxidative-antioxidant systems of the body.

The aim of the study: To investigate the effectiveness of endobronchial methods in the treatment of chronic lung abscesses using various drug compositions.

Methods: Examination and treatment of 98 patients with chronic lung abscesses was performed on the basis of the Department of Thoracic and Abdominal Surgery of State Institution "V. T. Zaitsev Institute of General and Urgent Surgery of the National Academy of Medical Sciences of Ukraine". Patients were divided into two groups: main and comparative. Patients of the main group together with anti-inflammatory drugs were



systemically and locally prescribed liposomal drug. Standard methods were used in patients of the comparative group.

Results: *The effectiveness of endobronchial methods of treatment of chronic abscesses has been proven by positive dynamics of ultrasound diagnostics at an earlier date than in the case of standard treatments. Based on the analysis of laboratory parameters, a significant positive effect of the applied method on reducing the level of endogenous intoxication was established.*

Conclusions: *The obtained data demonstrate significantly higher efficiency of the proposed method of endobronchial treatment of patients with chronic lung abscesses, including a combination of drainage and rehabilitation of the destruction cavity with anti-inflammatory therapy and its advantage over standard treatment regimens, accompanied by faster statistically significant regression endogenous intoxication.*

Keywords:

chronic lung abscess, endobronchial treatments, endobronchial methods, patient, therapy.

Сучасні ендобронхіальні методи в лікуванні хронічних абсцесів легень

**Антон А. СЕРЕНКО¹ , Василь Г. ГРОМА^{1,2} ,
Дмитро В. МІНУХІН² , Денис О. ЄВТУШЕНКО² **

¹ ДУ “Інститут загальної та невідкладної хірургії ім. В. Т. Зайцева
НАМН України”, Україна

² Харківський національний медичний університет, Україна

Деталі Автора-Кореспондента:

Денис О. Євтушенко, dr.yevtushenko@ukr.net

Анотація

Вступ: *Незважаючи на досягнення сучасної медичної науки, проблема лікування хронічних абсцесів легень залишається не до кінця вирішеною. Спостерігається чітка тенденція до поширення кількості хворих з цією патологією. Одним із шляхів поліпшення результатів лікування хворих з хронічними абсцесами легень є пошук нових способів лікування цього захворювання, зокрема за допомогою ендобронхіальних методів санації та корекції активності оксидантно-антиоксидантної систем організму.*



Мета дослідження: Дослідити ефективність застосування ендобронхіальних методів у лікуванні хронічних абсцесів легень з використанням різних лікарських композицій.

Методи: На базі відділення торако-абдомінальної хірургії ДУ “Інститут загальної та невідкладної хірургії ім. В. Т. Зайцева НАМН України” проведено обстеження та лікування 98 хворих з хронічними абсцесами легень. Хворих розподілили на дві групи: основну та порівняльну. Хворим основної групи разом із протизапальними препаратами системно та місцево призначали ліпосомальний препарат. У хворих порівняльної групи застосовували стандартні методи.

Результати: Ефективність ендобронхіальних методів лікування хронічних абсцесів доведена позитивною ультразвуковою динамікою в більш ранні строки, ніж у разі застосування стандартних методів лікування. На підставі аналізу лабораторних показників встановлено суттєвий позитивний вплив застосованої методики на зниження рівня показників ендогенної інтоксикації.

Висновки: Отримані дані демонструють вірогідно більш високу ефективність запропонованого методу ендобронхіального лікування хворих на хронічні абсцеси легень, що включає комбінацію дренажу та санації порожнини деструкції з протизапальною терапією та його перевагу перед стандартними схемами лікування, що супроводжувалося більш швидким статистично достовірним регресом патологічного процесу та суттєвим зниженням рівня ендогенної інтоксикації.

Ключові слова:

хронічний абсцес легень, ендобронхіальне лікування, ендобронхіальні методи, пацієнт, терапія.

Вступ:

Незважаючи на стрімкий розвиток медичної науки, проблема лікування хронічних абсцесів легень залишається не до кінця вирішеною. Спостерігається чітка тенденція до поширення кількості хворих на цю патологію (Voiko et al., 2007; Kotiv et al., 2009; Nicolini et al., 2014).

Довготривала наявність гнійного процесу в легенях збільшує можливість виникнення тяжких та небезпечних для життя ускладнень (кровотеч, септикопемій та ін.), розвитку незворотних змін серцево-



судинної системи, системи дихання та внутрішніх органів (Boiko et al., 2007; Marra et al., 2015; Nicolini et al., 2014).

На всіх етапах лікування адекватне дренирування порожнини деструкції залишається одним із основних умов для одужання хворого або як етап передопераційної підготовки (Boiko et al., 2007; Safonov & Shahov, 2015; Shoikhet et al., 2014). З точки зору фізіології системи дихання найбільш оптимальними методами дренирування являються ендобронхіальні (бронхоскопічні) (Boiko et al., 2007; Cascone et al., 2020; Shoikhet et al., 2014). Перевагами ендобронхіальних методик лікування являються: малоінвазивність, збереження кашльового рефлексу, можливість проведення програмних санацій порожнини деструкції та дренируючих бронхів (Boiko et al., 2007; Cascone et al., 2020; Shoikhet et al., 2014; Unterman et al., 2017).

Одним із шляхів поліпшення результатів лікування хворих з хронічними абсцесами легень являється пошук нових способів лікування цього захворювання, зокрема за допомогою застосування різних лікарських комбінацій та корекції активності оксидантно-антиоксидантної систем організму (Boiko et al., 2007; Boiko et al., 2015).

Частіше за все для динамічного контролю репаративних процесів у легеневій тканині використовуються променеві методи діагностики такі як рентгенографія та комп'ютерна томографія (КТ). На відміну від традиційних методів, ультразвукове дослідження (УЗД) необгрунтовано використовується досить рідко в торакальній хірургії та пульмонології. Хоча УЗД дозволяє отримувати таке саме двомірне зображення, як і КТ (Kotiv et al., 2009; Safonov & Shahov, 2015).

Усі вище перелічені факти і послужили поштовхом для нашого дослідження.

Мета дослідження. Дослідити ефективність застосування ендобронхіальних методів у лікуванні хронічних абсцесів легень з використанням різних лікарських композицій.

Методи:

На базі відділення торако-абдомінальної хірургії ДУ “Інститут загальної та невідкладної хірургії ім. В. Т. Зайцева НАМН України” обстежено та проліковано 98 хворих з хронічними абсцесами легень. Усі хворі були розподілені на 2 групи. Першу групу (порівняння) склали 48 хворих, яким крім консервативного лікування, що включало протизапальну, антибактеріальну і дезінтоксикаційну терапію, здійснювалися традиційні підходи до ендобронхіальної санації вогнища гнійно-запального процесу. Другу групу (основну) склали 50



хворих, яким виконували ендоскопічне дренивання абсцесу за власною методикою під візуальним контролем з використанням рентгеноконтрастних катетерів з подальшою санацією порожнини деструкції. Хворим основної групи разом з протизапальними препаратами призначали ліпосомальний препарат “Ліпін”: системно (внутришньовенно у дозі 10 мг/кг ваги тіла) та місцево (інгаляційно, ендобронхіальні заливки та введення до порожнини деструкції у суміші з протизапальними препаратами).

Для оцінки ефективності лікування застосовували лабораторні та інструментальні методи дослідження. Серед лабораторних методів особливу увагу приділяли показникам ендогенної інтоксикації та перекисного окислення ліпідів (ПОЛ). Одними із найважливіших показників цих процесів є рівень таких продуктів, як молекули середньої маси (МСМ), малоновий діальдегід (МДА), дієнові кон'югати (ДК), супероксиддисмутаза (СОД). Також вивчався показник лейкоцитарного індексу інтоксикації (ЛІІ). Порівняння проводили використовуючи критерій Стьюдента. З метою виявлення статистично достовірних даних у пацієнтів основної групи та групи порівняння ми використовували початкові (на момент госпіталізації) та проміжкові (на 10 добу лікування) значення вищевказаних параметрів. Інструментальний контроль ефективності лікування проводили за допомогою рентгенологічних методів дослідження (рентгенографія, комп'ютерна томографія) та ультразвукового дослідження (УЗД). Перевагу віддавали ультразвуковому дослідженню, як методу з найменшим шкідливим навантаженням на організм хворого. Ультразвуковими критеріями ефективності лікування вважали зменшення розмірів порожнини (позитивна ультразвукова динаміка) та появу ознак облітерації порожнини. Частота контрольних досліджень – 1 раз у три доби.

Ендобронхіальні лікувально-діагностичні методи виконували в умовах місцевої анестезії апаратом фірми Olympus BF TYPE 1T 180. Після проведення евакуації гнійного відокремлюемого та визначення дреноючого бронху нами, під рентгенологічним контролем, проводилась катетеризація устя дреноючого бронху або порожнини хронічного абсцесу поліхлорвініловим катетером.

Результати:

У процесі лікування хворих досліджуваних груп нами здійснювався динамічний контроль ефективності лікування.

При аналізі показників лабораторної ефективності комплексного лікування хворих на хронічні абсцеси легень із



застосуванням запропонованої суміші протизапальних препаратів (гідрокортизону та гатіфлоксацину) та ліпосомального препарату “Ліпін” чітко відстежується суттєвий вплив запропонованої лікарської суміші на зниження рівня показників ендогенної інтоксикації та продуктів перекисного окислення ліпідів.

Так, у хворих основної групи відмічене достовірне зниження рівня МСМ з 0.63 ± 0.05 до 0.32 ± 0.01 у.о., тоді як у хворих групи порівняння рівень МСМ знизився з 0.64 ± 0.06 до 0.56 ± 0.04 у.о., що у 1.75 рази більше ($p < 0.05$). При порівнянні рівня показників ПОЛ – ДК та МДА видно, що рівень ДК у хворих основної групи знизився з 187.5 ± 6.7 до 114.3 ± 5.2 ммоль/л, що у 1.4 рази менше ($p < 0.05$) ніж динаміка зниження рівня ДК у хворих групи порівняння (з 184.4 ± 5.9 до 162.7 ± 5.3 ммоль/л); рівень МДА знизився у хворих основної групи з 20.5 ± 0.84 до 9.78 ± 0.25 ммоль/л, що у 1.6 рази менше ($p < 0.05$) ніж динаміка рівню МДА у хворих групи порівняння (з 19.8 ± 0.96 до $15.2 \pm 0,85$ ммоль/л). При оцінюванні активності антиоксидантної системи було з’ясовано, що рівень СОД у хворих основної групи, під впливом запропонованого лікування, підвищився з 17.6 ± 3.4 до 46.3 ± 2.6 од/г Нв, тоді як у хворих групи порівняння з 17.7 ± 3.2 до 32.3 ± 3.9 од/г Нв, що у 1.4 рази менше ($p < 0.05$). При порівнянні рівня ЛПІ, який обчислювалася за формулою Кальф-Каліфа, у групах дослідження нами було з’ясовано, що у хворих основної групи на 10 добу лікування ЛПІ склав 1.49 ± 0.62 , що у 3.7 рази менше ($p < 0.05$) ніж на той же час у хворих групи порівняння (5.58 ± 1.23).

Так як інструментальний контроль ефективності лікування проводили переважно за допомогою УЗД, нами були введені наступні ультразвукові (УЗ) критерії оцінки: 1) зменшення розмірів порожнини; 2) терміни очищення порожнини хронічного абсцесу; 3) ознаки часткової облітерації порожнини абсцесу – поява відкладень фібрину на стінках порожнини. Більша ефективність лікування відмічена у хворих основної групи, що проявилася в прискоренні очищення порожнини абсцесу – 7.85 ± 0.34 діб, що раніше на 2.3 доби ($p < 0.05$) ніж у групі порівняння; прискоренні позитивної ультразвукової динаміки – 8.9 ± 0.59 діб, що раніше на 2.9 доби ($p < 0.05$) ніж у групі порівняння. Терміни часткової облітерації порожнини скоротилися в середньому на 3 доби: з 15.1 ± 0.6 діб у хворих групи порівняння до 11.9 ± 0.78 діб у хворих основної групи.



Висновки:

1. Отримані дані демонструють вірогідно більш високу ефективність запропонованого методу ендобронхіального лікування хворих на хронічні абсцеси легень, що включає комбінацію дренажу та санації порожнини деструкції з протизапальною терапією та його перевагу перед стандартними схемами лікування, що супроводжувалося більш швидким статистично достовірним регресом патологічного процесу та суттєвим зниженням рівня ендогенної інтоксикації.

2. Стандартні методи променевої діагностики при хронічних абсцесах легень необхідно більш широко доповнювати ультразвуковим дослідженням, особливо з метою динамічного спостереження під час лікувального процесу, що дозволяє значно знизити променеве навантаження на хворих.

Conflicts of interests:

The authors declare that there is no conflict of interests.

Source of support:

This research did not receive any outside funding or support.

References

- Boiko, V. V., Florikyan, A. K., & Avdosyev, Yu. V. (2007). *Gnojnye zabojevanija legkih i plevry [Purulent diseases of the lungs and pleura]*. Prapor. [in Russian]
- Boiko, V. V., Minukhin, D. V., & Tarasenko, L. H. (2015). Zastosuvannia liposomalnykh likarskykh kompozytsii u likuvanni hniino-destruktyvnykh zakhvoriuvan lehen [The use of liposomal drug compositions in the treatment of purulent-destructive lung diseases]. *Kharkivska khirurhichna shkola – Kharkiv Surgical School, 1(70)*, 55–58. [in Ukrainian]
- Cascone, R., Sica, A., Sagnelli, C., Carlucci, A., Calogero, A., Santini, M., & Fiorelli, A. (2020). Endoscopic treatment and pulmonary rehabilitation for management of lung abscess in elderly lymphoma patients. *International Journal of Environmental Research and Public Health, 17(3)*, 997. <https://doi.org/10.3390/ijerph17030997>
- Kotiv, B. N., Barinov, O. V., & Saenko, O. Yu. (2009). Vozmozhnosti rentgenografii, UZI, KT dlja ocenki reparativnyh processov posle abscessov legkogo i jempiemy plevry [Possibilities of radiography, ultrasound, CT for assessing reparative processes after lung abscesses and pleural empyema]. *Vestnik Rossijskoj voenno-*



- medicinskoj akademii – Bulletin of the Russian Military Medical Academy*, 4(28), 42–46. [in Russian]
- Marra, A., Hillejan, L., & Ukena, D. (2015). Behandlung von lungen abszess [Treatment of lung abscess]. *Zentralblatt fur Chirurgie – Central Sheet for Surgery*, 140(suppl 1), 47–53. <https://doi.org/10.1055/s-0035-1557883> [in German]
- Nicolini, A., Cilloniz, C., Senarega, R., Ferraioli, G., & Barlascini, C. (2014). Lung abscess due to *Streptococcus pneumoniae*: A case series and brief review of the literature. *Advances in Respiratory Medicine*, 82(3), 276–285. <https://doi.org/10.5603/PiAP.2014.0033>
- Safonov, D. V., & Shahov, B. E. (2015). Ultrazvukovaja diagnostika vospalitelnyh zabolevanij legkih [Ultrasound diagnostics of inflammatory lung diseases]. *Mezhdunarodnyj zhurnal jeksperimentalnogo obrazovanija – International Journal of Experimental Education*, 2(2), 195–196. [in Russian]
- Shoikhet, Ya. N., Syzdykbaev, M. K., Kurtukov, V. A., & Kapitulin, S. Yu. (2014). Selektivnaja transtrahealnaja kateterizacija bronhov v lechenii ostryh abscessov i gangren legkogo [Selective transtracheal kateterization of bronchial tubes in treatment of sharp abscesses and gangrenes of a lung]. *Sovremennye problemy nauki i obrazovaniya – Modern Problems of Science and Education*, 3, 472. [in Russian]
- Unterman, A., Fruchter, O., Rosengarten, D., Izhakian, S., Abdel-Rahman, N., & Kramer, M. R. (2017). Bronchoscopic drainage of lung abscesses using a pigtail catheter. *Respiration*, 93, 99–105. <https://doi.org/10.1159/000453003>
- Wali, S. O. (2012). An update on the drainage of pyogenic lung abscesses. *Annals of Thoracic Medicine*, 7(1), 3–7. <https://doi.org/10.4103/1817-1737.91552>

Information about the authors:

Serenko Anton Andriiovych – <https://orcid.org/0000-0002-6410-4509>; Graduate Student, Department of Surgery of the Thoracic Cavity, State Institution “V. T. Zaitsev Institute of General and Urgent Surgery of the National Academy of Medical Sciences of Ukraine”, Kharkiv, Ukraine.

Research interests: surgery, medical sciences.

Hroma Vasily Grigorovich – <https://orcid.org/0000-0003-1886-3181>; Doctor of Medical Sciences, MD, Professor, Professor of the Department of Surgery No. 1, Kharkiv National Medical University; Head of the Department of Operative Endoscopy, State Institution “V. T. Zaitsev



Institute of General and Urgent Surgery of the National Academy of Medical Sciences of Ukraine”, Kharkiv, Ukraine.

Research interests: surgery, education, medical sciences.

Minukhin Dmytro Valeriiovych – <https://orcid.org/0000-0003-3371-1178>;

Doctor of Philosophy in Medicine, Associate Professor, Associate Professor of the Department of Surgery No. 1, Kharkiv National Medical University,

Research interests: surgery, education, medical sciences.

Yevtushenko Denys Oleksandrovych – <https://orcid.org/0000-0003-1941-7183>;

Doctor of Medical Sciences, MD, Professor, Professor of the Department of Surgery No. 1, Kharkiv National Medical University,

Research interests: surgery, education, medical sciences.

Cite this article as:

Serenko, A. A., Hroma, V. G., Minukhin, D. V., & Yevtushenko, D. O. (2021). Suchasni endobronkhiální metody v likuvanni khronichnykh abstsiesiv lehen [Modern endobronchial methods in the treatment of chronic lung abscesses]. In Yu. B. Melnyk, & L. M. Georgieva (Eds.), *Current Issues of Education and Science. 9th International Conference, CIES-2021, Riga, Latvia – Kharkiv, Ukraine, November 10–13, 2021, Conference proceedings* (pp. 83–91). KRPOCH. <https://doi.org/10.26697/9786177089147.2021.10> [in Ukrainian]

Copyright information:



The published paper are licensed under a Creative Commons “Attribution” 4.0 Worldwide



The electronic version of this article is complete. Full or partial reproduction of article is allowed, citing to the source, author(s) and DOI. An electronic copy of the Conference proceedings in open access is available via the KRPOCH Publishing website <https://publisher.culturehealth.org>



Current Issues of Education and Science, 2021
Conference proceedings. ISBN: 978-617-7089-14-7
<https://doi.org/10.26697/9786177089147.2021>
HEALTH CARE SCIENCE



DOI: <https://doi.org/10.26697/9786177089147.2021.11>

Comparison of the Intensity of Pain in Patients with Acute Cholecystitis with Different Types of Surgical Accesses

Polina O. HORDIENKO¹ , Anastasiia L. SOCHNIEVA¹ 

¹ Kharkiv National Medical University, Ukraine

Corresponding Author Details

Polina O. HORDIENKO, pohordiienko.1m16@knuu.edu.ua

Received: 01.10.2021; Accepted: 29.10.2021; Published: 17.12.2021

Brief Summary

Background: Topicality is related to the widespread prevalence of acute cholecystitis as one of the surgical pathologies. There are 3 types of surgical access for cholecystectomy: laparotomy, laparoscopic and mini-laparotomy in the right hypochondrium. At the postoperative period, patients complain of the pain that occurs at the site of the surgical wound. Intensity of pain depends on the type of surgery.

The aim of the study: To analyze and compare the intensity of postoperative pain in different types of surgical accesses in patients with acute cholecystitis.

Methods: The study was performed at the State Institution "V. T. Zaitsev Institute of General and Urgent Surgery of the National Academy of Medical Sciences of Ukraine" on the treatment of acute cholecystitis from 2019 to 2021. 30 case histories of patients with acute cholecystitis were analyzed. Patients were divided into 3 groups: Group I – 24 (80.00%) patients underwent laparoscopic cholecystectomy, Group II – 5 (16.67%) – with mini-access and Group III – 1 (3.33%) – laparotomy due to the pronounced adhesion process of the abdominal organs. The intensity of pain was assessed by using a Visual Analog scale.

Results: According to the results of the assessment of pain intensity by Visual Analog scale: patients of Group I on the 2nd day after surgery noted pain at the level 50 ± 8.75 mm, on the 5th day – 0 mm, patients of the II



Group on the 2nd day – 70 ± 9.32 mm, on the 5th day – 20 ± 5.88 mm. Group III on 2nd day – 90 ± 8.85 mm, on 5th day – 40 ± 2.87 mm.

Conclusions: *The use of laparoscopic access in the surgical treatment of acute cholecystitis improves the quality of life of patient in the postoperative period and reduces pain.*

Keywords:

postoperative pain syndrome, laparoscopy, laparotomy, cholecystectomy, mini-laparotomy in the right hypochondrium.

Background:

An acute cholecystitis is one of the most common surgical diseases of the abdominal cavity. The most common cause of acute cholecystitis is the ingress of gallstones into the gall bladder's cervix, which prevents the outflow of bile from the gall bladder, causing its stagnation, activation of inflammatory agents with the addition of bacterial agents, with further inflammation of the organ's wall and its perforation (Hassler et al., 2021; Kim & Donahue, 2018; Warchałowski et al., 2020). In this case, perforation of gall bladder leads to the development of biliary peritonitis, which causes high mortality in most cases. Parasitic factors, congenital anomalies of the gallbladder and a pronounced adhesion of the abdominal organs also can cause acute cholecystitis (Kim & Donahue, 2018; Kim et al., 2020; Sanford, 2019).

There are different options for surgical approaches for cholecystectomy. Cholecystectomy is performed by a laparotomy approach, which has lost its popularity today due to the appearance of postoperative complications (e. g., infectious complications from a surgical wound) in the recovery period, but it is performed when patient has contraindications for laparoscopy (Abelson et al., 2015; Bingener et al., 2015; Jones et al., 2021; Singh et al., 2020). There are also laparoscopic cholecystectomy and cholecystectomy performed in the way of a mini-laparotomy in the right hypochondrium (Del-Moral-Martínez et al., 2015; Jung et al., 2019; Qiu et al., 2019). Postoperative pain deteriorates the quality of life of patients, increases the duration of patients' hospitalization and the duration of recovery period (Hassler et al., 2021; Kim & Donahue, 2018). So, pain needs to be minimized and eliminated with narcotic or non-narcotic analgesics as needed.

The aim of the study. To compare the intensity of postoperative pain in different types of surgical approaches in patients with acute cholecystitis, with using a Visual-analog scale.



Methods:

Patients were treated in the surgical departments of the State Institution “V. T. Zaitsev Institute of General and Urgent Surgery of the National Academy of Medical Sciences of Ukraine” with an acute cholecystitis from 2019 to 2021. The materials of the study were 30 case-histories of patients, that were hospitalized with acute cholecystitis. The diagnosis of acute cholecystitis was established on the basis of complaints, which included: pain in the right hypochondrium, dyspeptic complaints, such as nausea and vomiting, fever over 38° C, ultrasound examination of the gall bladder. According to the ultrasound examination of the gall bladder: an increasing size of gall bladder more than 80x40 mm, wall thickening - more than 3 mm and its double contour, the presence of stones in the cervix of gall bladder and a positive ultrasound symptom of Murphy were found.

According to the type of surgery performed on patients, patients were divided into 3 groups: Group I – 24 (80.00%) patients underwent laparoscopic cholecystectomy, Group II – 5 (16.67%) patients underwent mini-access cholecystectomy and Group III – 1 (3.33%) included a patient who underwent cholecystectomy with laparotomy access. The indication for laparotomy was the presence of a pronounced adhesion process in the abdominal cavity.

The intensity of pain in the postoperative period was assessed using the Visual Analog Pain Scale, which has a graduation from 0 to 100 mm, 0 to 4 mm complies with the absence of pain, 5 to 44 mm is a weak pain, 45 to 74 mm complies with the level of moderate pain, and 75 to 100 mm characterizes severe pain. Patients were asked to assess pain at the site of the surgical wound by questionnaire. The questionnaire included questions about the type of surgery performed and the determination of pain intensity on a Visual-analog scale. The survey was conducted on the 2nd day after surgery and on the 5th day of the postoperative period.

Results:

According to the results of the assessment of pain intensity on the Visual-analog scale, patients of group I on the 2nd day after surgery noted pain at the level of 50±8.75 mm, on the 5th day this group of patients noted pain intensity equal to 0 mm. Among patients of group II on the 2nd day the pain intensity was at the level of 70±9.32 mm, and on the 5th day – 20±5.88 mm. Among patients of group III on the 2nd day the pain intensity was at the level of 90 mm, and on the 5th day – 40 mm.

In most cases, non-narcotic analgesics were prescribed to patients of group I in the postoperative period: in 18 patients (83.33%), patients in



group II were prescribed both non-narcotic analgesics (in 4 patients – 80.00%) and narcotic analgesics (in 1 patient – 20.00%). Patients in group III who underwent cholecystectomy by laparotomy were prescribed narcotic analgesics to eliminate pain, improve their recovery period and improve the quality of life in the postoperative period.

Conclusions:

The intensity of pain in the postoperative period was the highest in patients of groups III and II on the 2nd day of assessment on the Visual-analog scale of pain. At the 5th day, patients who underwent laparoscopic access had a pain intensity of 0 mm, in contrast to group II patients, who had slight discomfort in the area of the surgical wound, and group III patients, who had severe pain that was almost equal to the pain that occurred in patients of group I for 2 days after surgery.

Also, more than 80% of patients in groups II and III required the usage of narcotic analgesics to relieve postoperative pain, in contrast to patients in group I, who were prescribed non-narcotic analgesics in 80% of cases and narcotic in only 20% of cases.

The usage of laparoscopic access in the surgical treatment of an acute cholecystitis improves the quality of life of the patient in the postoperative period, reduces pain and does not require the usage of narcotic analgesics to eliminate pain in the postoperative period.

Acknowledgments:

We would like to thank our scientific supervisor, Boyko Valeriy Volodymyrovich, Professor, Head of the Department of Surgery No. 1, Doctor of Medical Sciences, Academic of National Academy of Medical Sciences of Ukraine, Director of the State Institution “V. T. Zaitsev Institute of General and Urgent Surgery of the National Academy of Medical Sciences of Ukraine”, who guided us in doing this article. He provided us with invaluable and useful advices and helped us with practical part of this scientific-research work. Besides, we would like to thank all the teachers who helped us by giving us advice and providing the equipment which we needed. At last but not in the least, we would like to thank everyone who helped and motivated us to work on this article.

Conflicts of interests:

The authors declare that there is no conflict of interests.

Source of support:

This research did not receive any outside funding or support.



References

- Abelson, J. S., Afaneh, C., Rich, B. S., Dakin, G., Zarnegar, R., Fahey III, T. J., & Pomp, A. (2015). Advanced laparoscopic fellowship training decreases conversion rates during laparoscopic cholecystectomy for acute biliary diseases: A retrospective cohort study. *International Journal of Surgery*, 13(January), 221–226. <https://doi.org/10.1016/j.ijss.2014.12.016>
- Bingener, J., Thomsen, K. M., McConico, A., Hess, E. P., & Habermann, E. B. (2015). Success of elective cholecystectomy treatment plans after emergency department visit. *The Journal of Surgical Research*, 193(1), 95–101. <https://doi.org/10.1016/j.jss.2014.06.023>
- Del-Moral-Martínez, M., Barrientos-Delgado, A., Crespo-Lora, V., Cervilla-Sáez-de-Tejada, M. E., & Salmerón-Escobar, J. (2015). Eosinophilic cholecystitis: An infrequent cause of acute cholecystitis. *Revista Espanola de Enfermedades Digestivas – The Spanish Journal of Gastroenterology*, 107(1), 45–47. <https://scielo.isciii.es/pdf/diges/v107n1/nota2.pdf>
- Hassler, K. R., Collins, J. T., Philip, K., & Jones, M. W. (2021). Laparoscopic cholecystectomy [Review]. In *StatPearls*. StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK448145/>
- Jones, M. W., Guay, E., & Deppen, J. G. (2021). Open cholecystectomy [Review]. In *StatPearls*. StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK448176/>
- Jung, G. S., Kim, Y. J., Yun, J. H., Park, J. G., Yun, B. C., Han, B. H., Lee, S. U., & Kim, Y. H. (2019). Percutaneous transcholecystic removal of common bile duct stones: Case series in 114 patients. *Radiology*, 290(1), 238–243. <https://doi.org/10.1148/radiol.2018173043>
- Kim, S. S., & Donahue, T. R. (2018). Laparoscopic cholecystectomy. *JAMA*, 319(17), 1834. <https://doi.org/10.1001/jama.2018.3438>
- Kim, T. H., Bae, H. J., & Hong, S. G. (2020). A rare fatal bile peritonitis after malposition of endoscopic ultrasound-guided 5-fr nasogallbladder drainage. *Clinical Endoscopy*, 53(1), 97–100. <https://doi.org/10.5946/ce.2019.032>
- Qiu, S. Y., Ng, K. K., Cheung, T. T., Liu, C. H., Zhu, H. T., Xu, B. R., Ji, R., & Lo, C. M. (2019). A successful combined laparoscopic cholecystectomy and laparoscopic exploration of common bile duct for acute gangrenous cholecystitis and choledocholithiasis during pregnancy: A case report. *International Journal of Surgery Case Reports*, 58, 14–17. <https://doi.org/10.1016/j.ijscr.2019.03.062>



- Sanford, D. E. (2019). An update on technical aspects of cholecystectomy. *Surgical Clinics of North America*, 99(2), 245–258. <https://doi.org/10.1016/j.suc.2018.11.005>
- Singh, S., Armenia, S. J., Merchant, A., Livingston, D. H., & Glass, N. E. (2020). Treatment of acute cholecystitis at safety-net hospitals: Analysis of the national inpatient sample. *The American Surgeon*, 86(1), 28–34. <https://doi.org/10.1177/000313482008600116>
- Warchałowski, Ł., Łuszczki, E., Bartosiewicz, A., Dereń K., Warchałowska, M., Oleksy, Ł., Stolarczyk, A., & Podlasek, R. (2020). The analysis of risk factors in the conversion from laparoscopic to open cholecystectomy. *International Journal of Environmental Research and Public Health*, 17(20), 7571. <https://doi.org/10.3390/ijerph17207571>

Information about the authors:

Hordiienko Polina Oleksiivna – <https://orcid.org/0000-0002-6316-5625>;
Kharkiv National Medical University, Kharkiv, Ukraine.

Research interests: abdominal surgery, operative gynecology.

Sochnieva Anastasiia Lvovna – <https://orcid.org/0000-0003-0106-5247>;
Doctor of Philosophy in Medicine, Assistant Professor of the Department of Surgery No. 1, Kharkiv National Medical University, Kharkiv, Ukraine.

Research interests: abdominal surgery, cardiac surgery, thoracic surgery.

Cite this article as:

Hordiienko, P. O., & Sochnieva, A. L. (2021). Comparison of the intensity of pain in patients with acute cholecystitis with different types of surgical accesses. In Yu. B. Melnyk, & L. M. Georgieva (Eds.), *Current Issues of Education and Science. 9th International Conference, CIES-2021, Riga, Latvia – Kharkiv, Ukraine, November 10–13, 2021, Conference proceedings* (pp. 92–97). KRPOCH. <https://doi.org/10.26697/9786177089147.2021.11>

Copyright information:



The published paper are licensed under a Creative Commons “Attribution” 4.0 Worldwide



The electronic version of this article is complete. Full or partial reproduction of article is allowed, citing to the source, author(s) and DOI. An electronic copy of the Conference proceedings in open access is available via the KRPOCH Publishing website <https://publisher.culturehealth.org>



Current Issues of Education and Science, 2021
Conference proceedings. ISBN: 978-617-7089-14-7
<https://doi.org/10.26697/9786177089147.2021>
HEALTH CARE SCIENCE



DOI: <https://doi.org/10.26697/9786177089147.2021.12>

Study of the Phenotypes of Clinical Isolates of Dominant Species of Staphylococcus, Isolated from Patients with Atopic Dermatitis

Svetlana K. DZHORAIEVA¹ , Yuliia V. SHCHERBAKOVA¹ ,
Irina V. ZUBAN¹ 

¹ Institute of Dermatology and Venereology of the National Academy
of Medical Sciences of Ukraine, Ukraine

Corresponding Author Details

Svetlana K. DZHORAIEVA, dzhoraevasvetlana@gmail.com

Received: 23.09.2021; Accepted: 21.10.2021; Published: 17.12.2021

Brief Summary

Background: Atopic dermatitis (AD) occupy the main place among dermatoses, where the allergic component is leading in the onset and development of the disease. The most common complication of allergic dermatitis is the attachment of a secondary pyococcus infection, which is associated with a decrease in the antimicrobial resistance of skin surface.

The aim of the study: To determine phenotypic features of staphylococci extracted from patients with allergic dermatitis to assess their pathogenic potential.

Methods: The object of the study was staphylococcus isolates removed from affected and intact skin sections of patients with AD, as well as from representative skin sections of healthy individuals undergoing inpatient treatment at the Department of Dermatology of Institute of Dermatology and Venereology.

Results: It's established that the complex of phenotypic traits of the removed staphylococcus cultures indicates the presence in the pathogen of factors related to the resistance of the host protection mechanisms and determines the intensity of the alterative action of the infectant in relation to



the host organism, the phenotypic manifestation of the studied factors was higher in the staphylococcus isolates removed from the affected skin areas of patients with allergic dermatitis.

Conclusions: *The level and frequency of phenotypic expression of pathogenicity factors are more pronounced in microorganisms obtained from patients from affected and intact areas compared to controls, which confirms their pathogenetic role in the burden of the disease, which in turn can be used as an auxiliary differential diagnosis criterion.*

Keywords:

clinical strains of staphylococci, atopic dermatitis, infectious complications, pathogenicity factors.

Background:

Atopic dermatitis occupies the main place among dermatoses, where the allergic component is leading in the onset and development of the disease (Belkaid & Segre, 2014; Kantor et al., 2016). The most common complication of allergic dermatitis is the attachment of a secondary pyococcus infection, which is associated with a decrease in the antimicrobial resistance of the skin surface (Grice et al., 2008; Nada et al., 2012; Rojo et al., 2014). In this case, the leading role is played by *Staphylococcus aureus*, which is seeded in 80-95% of patients diagnosed with AD. The clinical significance of the pathogen is determined by its ability to actively survive in the biotope, aided by a wide range of pathogenicity factors of this microorganism. Therapy of infectious lesions is complicated by the increasing resistance of the main pathogens of pyoderma – *Staphylococcus aureus* and *Staphylococcus epidermidis* – to widely used antibiotics (Kutasevych et al., 2019; Oh et al., 2014).

The aim of the study. To determine the phenotypic features of staphylococci extracted from patients with allergic dermatitis to assess their pathogenic potential.

Methods:

The object of the study was staphylococcus isolates removed from affected and intact skin sections of patients with AE, as well as from representative skin sections of healthy individuals undergoing inpatient treatment at the Department of Dermatology of “Institute of Dermatology and Venereology of NAMS of Ukraine”. Biochemical identification and biological properties of staphylococci were determined using methods of classical bacteriology.



Results:

According to the obtained results of microbiological studies, the presence of a direct (positive) correlation between the severity of the course of dermatosis and the level of microbial contamination of both the lesions and the intact skin areas of patients is proved. The highest rates of microbial colonization density of affected skin areas were found in groups of patients with severe AD (7.0 ± 0.2 lg CFU/cm²). In patients with AD, a direct relationship was established between the severity of dermatosis and the frequency of *S. aureus* isolation from lesions and intact areas of the skin: 46.7% and 38.5% for mild cases 59.4% and 45.2% for moderate cases, 81.8% and 70.4% for severe cases. However, the frequency of *S. epidermidis* removal from the same groups of patients with AD had an inverse relationship: 20.0% and 30.8%, 15.6% and 19.4%, and 10.9% and 16.7%, respectively. Analysis of the enzymatic activity of isolates of dominant species of Staphylococcus removed from the skin lesions of patients with allergodermatoses, revealed that all strains of *S. aureus* displayed coagulase, lecithinase and hemolytic activity. The latter was also found in all *S. haemolyticus* strains and in 55.4% of *S. epidermidis* strains. The presence of lipolytic activity was determined in 74.7% of *S. aureus* strains, 82.7% of *S. haemolyticus* strains and 76.8% of *S. epidermidis* strains. Proteolytic activity, with corresponding manifestations of milk fermentation and gelatin dilution, was inherent in 95.3% and 82.9% of *S. aureus* strains, 49.3% and 24.0% of *S. haemolyticus* strains, as well as 73.2% and 19.6% of *S. epidermidis* strains, respectively.

According to the results of the study of adhesion-colonization potential of strains of staphylococci of different origin, it was found that the highest levels of the average adhesion index (AAI) and microbial adhesion index (MAI) were discovered in the group of strains removed from damaged skin areas of patients with allergic dermatoses ($p \leq 0.05$). At the same time, their values reached: AAI (3.5 ± 0.2) of bacteria/erythrocyte and MAI (4.2 ± 0.3) of bacteria/erythrocyte, which is almost 1.5 times higher than in the group of isolated strains from intact skin areas (respectively: (2.4 ± 0.2) and (2.8 ± 0.2) bacteria/erythrocyte) and 3 times higher than the values of similar indicators/indices of the control group of strains isolated from healthy individuals (respectively: (1.1 ± 0.2) and (1.5 ± 0.4) bacteria/erythrocyte). In the study of anti-lysozyme activity (ALA) in strains of staphylococci isolated from patients with allergodermatoses and from healthy individuals, it was found that 87.7% of the strains isolated from the affected skin areas of patients with a severe disease course, while in isolates from intact skin areas of theme-based patients and from healthy individuals the presence of ALA was found at the level of 48.8% and



17.6%, respectively ($p \leq 0.05$). In addition, it was found that the strains of *Staphylococcus* removed from the areas of the affected skin had the highest and absolute rates of ALA, which reached the strains of *S. aureus* (3.0 ± 0.2) $\mu\text{g/ml}$, *S. haemolyticus* (2.2 ± 0.1) $\mu\text{g/ml}$ and *S. epidermidis* (1.3 ± 0.1) $\mu\text{g/ml}$. According to the research of anti-interferon activity (AIA) of groups of *Staphylococcus* strains of different origin and species, it was found that 66.7% of *Staphylococcus* strains isolated from the affected skin areas of patients with allergodermatoses, 58.1% was isolated from intact skin areas and only 35.3% of them was isolated from the skin of healthy persons ($p \leq 0.05$). The level of expression of this trait in *S. aureus* strains removed from any (both affected and intact) areas of patients' skin was high and ranged from 2.0 to 2.3 IU.

In determining the sensitivity of *S. aureus* strains removed from patients with allergodermatoses to anti-bacterial drugs of different chemical groups (ABD strains, the highest ($p \leq 0.05$) sensitivity values were established for fusidic acid (90.8% and 92.3%, respectively) and oxazolidinones (92.1% and 93.7%, respectively), suggesting the latter for use as ABD at the initial stage of urgent treatment of severe forms of infectious-inflammatory complications to obtain the result of microbiological examination with determination of the actual antibiotic sensitivity of pathogens removed from locus morbi of patients with atopic dermatitis.

Conclusions:

Thus, the complex of phenotypic features of the removed staphylococcus cultures indicates the presence in the pathogen of factors associated with the resistance of host protection mechanisms, on the one hand, and high pathogenic potential, on the other, which promotes active colonization of both affected and intact areas of the skin, which provides the conditions for long-term persistence and determines the intensity of the alterative action of the infectious agent against the host organism.

The severity of anti-lysozyme and anti-interferon activities in strains isolated from affected skin areas was significantly higher than in cultures isolated from intact skin areas both qualitatively and quantitatively. The definition of high and moderate values of these signs for *S. aureus* strains in lesions compared with healthy skin suggests a certain complicating role of this factor for the development of AD.

The level and frequency of phenotypic expression of pathogenicity factors are more pronounced in microorganisms obtained from patients from affected and intact areas compared to controls, which confirms their



pathogenetic role in the burden of the disease, which in turn can be used as an auxiliary differential diagnosis criterion.

Conflicts of interests:

The authors declare that there is no conflict of interests.

Source of support:

This research did not receive any outside funding or support.

References

- Belkaid, Y., & Segre, J. A. (2014). Dialogue between skin microbiota and immunity. *Science*, *346*(6212), 954–959. <https://doi.org/10.1126/science.1260144>
- Grice, E. A., Kong, H. H., Renaud, G., Young, A. C., Bouffard, G. G., Blakesley, R. W., Wolfsberg, T. G., Turner, M. L., & Segre, J. A. (2008). A diversity profile of the human skin microbiota. *Genome Research*, *18*(7), 1043–1050. <https://doi.org/10.1101/gr.075549.107>
- Kantor, R., Thyssen, J. P., Paller, A. S., & Silverberg, J. I. (2016). Atopic dermatitis, atopic eczema, or eczema? A systematic review, meta-analysis, and recommendation for uniform use of ‘atopic dermatitis’. *Allergy*, *71*(10), 1480–1485. <https://doi.org/10.1111/all.12982>
- Kutasevych, Ya., Dzhoraeva, S., Shcherbakova, Yu., Bondarenko, G., & Sobol, N. (2019). Studying the pathogenic properties of the skin’s autoflora in patients diagnosed with atopic dermatitis. *Georgian Medical News*, *7-8*(292-293), 113–117. <https://pubmed.ncbi.nlm.nih.gov/31560675/>
- Nada, H. A., Gomaa, N. I., Elakhras, A., Wasfy, R., & Baker, R. A. (2012). Skin colonization by superantigen-producing *Staphylococcus aureus* in Egyptian patients with atopic dermatitis and its relation to disease severity and serum interleukin-4 level. *International Journal of Infectious Diseases*, *16*(1), e29–e33. <https://doi.org/10.1016/j.ijid.2011.09.014>
- Oh, J., Byrd, A. L., Deming, C., Conlan, S., Kong, H. H., & Segre, J. A. (2014). Biogeography and individuality shape function in the human skin metagenome. *Nature*, *514*, 59–64. <https://doi.org/10.1038/nature13786>
- Rojo, A., Aguinaga, A., Monecke, S., Yuste, J. R., Gastaminza, G., & España, A. (2014). *Staphylococcus aureus* genomic pattern and atopic dermatitis: may factors other than superantigens be involved? *European Journal of Clinical Microbiology & Infectious*



Diseases, 33(4), 651–658. <https://doi.org/10.1007/s10096-013-2000-z>

Information about the authors:

Dzhoraieva Svetlana Kariahdyivna – <https://orcid.org/0000-0003-2486-5474>; PhD, MD, Doctor of Medicine, Head of Laboratory and Experimental Department, Institute of Dermatology and Venereology of the National Academy of Medical Sciences of Ukraine, Kharkiv, Ukraine.

Research interests: microbiology, dermatology and sexually transmitted infections, diagnostics, biosafety.

Shcherbakova Yuliia Valeriivna – <https://orcid.org/0000-0002-3682-7451>; PhD, MD, Doctor of Medicine, Senior Researcher, Scientific Secretary, Institute of Dermatology and Venereology of the National Academy of Medical Sciences of Ukraine, Kharkiv, Ukraine.

Research interests: dermatology and sexually transmitted infections.

Zuban Irina Volodymurivna – <https://orcid.org/0000-0003-1323-6509>; Graduate Student, Institute of Dermatology and Venereology of the National Academy of Medical Sciences of Ukraine, Kharkiv, Ukraine.

Research interests: dermatology and sexually transmitted infections.

Cite this article as:

Dzhoraieva, S. K., Shcherbakova, Yu. V., & Zuban, I. V. (2021). Study of the phenopatotypes of clinical isolates of dominant species of staphylococcus, isolated from patients with atopic dermatitis. In Yu. B. Melnyk, & L. M. Georgieva (Eds.), *Current Issues of Education and Science. 9th International Conference, CIES-2021, Riga, Latvia – Kharkiv, Ukraine, November 10–13, 2021, Conference proceedings* (pp. 98–103). KRPOCH. <https://doi.org/10.26697/9786177089147.2021.12>

Copyright information:



The published paper are licensed under a Creative Commons “Attribution” 4.0 Worldwide



The electronic version of this article is complete. Full or partial reproduction of article is allowed, citing to the source, author(s) and DOI. An electronic copy of the Conference proceedings in open access is available via the KRPOCH Publishing website <https://publisher.culturehealth.org>



Current Issues of Education and Science, 2021
Conference proceedings. ISBN: 978-617-7089-14-7
<https://doi.org/10.26697/9786177089147.2021>
HEALTH CARE SCIENCE



DOI: <https://doi.org/10.26697/9786177089147.2021.13>

Medical Gloves and Their Importance for the Safety of Patients and Medical Personnel

Tatiana V. IARMAK¹ 

¹ Municipal Health Care Institution
“Kharkiv Regional Medical College”, Ukraine

Corresponding Author Details

Tatiana V. IARMAK, pi23rola@gmail.com

Received: 25.08.2021; Accepted: 30.09.2021; Published: 17.12.2021

Brief Summary

Background: As medical staff is in a constant contact with various negative factors such as biological, chemical, drugs, and disinfectants, the hands of medical staff require an additional protection barrier, which is the use of medical gloves. Hand hygiene of the medical staff in the modern prevention of nosocomial infections is one of the most important practices, but it is neglected oftentimes. In addition to hand washing and hand disinfection, medical gloves effectively protect patients and medical staff from potentially dangerous infectious agents.

The aim of the study: To show and emphasize the importance of medical gloves for the safety of patients and medical personnel in prevention of the healthcare-associated infections.

Methods: Due to the mounting rates of infectious diseases among the population during the execution of surgeries and invasive procedures (intravenous and intramuscular manipulations, endoscopic examinations, hemodialysis, plasmapheresis, etc.), the risk of contracting occupational diseases, as well as the cases of patients getting infected as the result of the medical care provision have significantly increased over the past decades.

Results: It was examined the importance of medical gloves in the prevention of infections related to the provision of medical care, in particular nosocomial infections; described types, kinds and characteristics



of medical gloves, their barrier properties, studied the selection criteria, the necessity of use. The material presented is essential for the work of medical staff in the healthcare facilities, laboratories etc.

Conclusions: *Considering the fact that the selection of medical gloves is based on the risk assessment, the correct use of medical gloves is a bottom line for the safety and protection of patients and medical personnel from the health-associated infections.*

Keywords:

medical gloves, hand hygiene, hands, prevention, healthcare-associated infections, medical personnel, patient.

Background:

One of the most pressing and vital problems in modern medicine for all the countries in the world is the problem of the healthcare associated infections (HAIs), in particular, nosocomial infections. A high mortality rate, socio-economic, moral damage are the reasons why HAIs pose one of the most serious threats to the health of the patient and the staff. To minimize the risks of nosocomial infections, it is necessary to use preventive measures. The use of medical gloves is an important preventive measure to combat the HAIs. Medical gloves create additional barrier and protect patients and the staff from contracting various infectious agents. Damaged and contaminated gloves create a higher risk of infection for both parties.

There are no standards of the glove selection in any country in the world (Kampf, 2005). Medical gloves are classified according to the type of material, shape, texture, purpose and scope.

Gloves are divided into diagnostic (examination); surgical – with an extended cuff; special purpose surgical gloves such as gynecological, orthopedic – extremely durable, ophthalmic – hypersensitive and other); protective, sterile, non-sterile.

Each type of glove, in addition to its intended use, provides different levels of protection. Gloves are not only intended for medical purpose, but are also means of individual protection, depending on the purpose. Medical gloves should be of the correct size, fit snugly around the hand, maintain a high tactile sensitivity, but at the same time be durable and resistant to the risk of damage during surgical operations, manipulations and other medical procedures, which depends on the density (the frequency of the gloves puncture is from 4.6 to 82.5%) (Zueva, 2000); protect from biological agents, the influence of aggressive chemicals; be hypoallergenic; be airtight



(according to the European standard EN 455-1, AQL – “acceptable level of quality”, the hermeticity index should not exceed 1.5).

The staff, whose work involves blood and other human biological liquids, falls into a category of higher risk and requires gloves as an essential part of the healthcare worker's clothing. Disposable medical gloves are used to protect the hands of medical personnel and create a protective barrier between the patient and medical personnel in performance of their professional duties.

The aim of the study. To show and emphasize the importance of medical gloves for the safety of patients and medical personnel in prevention of the healthcare-associated infections.

Methods:

The Order of the Ministry of Health of Ukraine of 21.09.2010 No. 798 approved methodological recommendations “On surgical and hygienic hand-washing of medical personnel”, where clause 5 regulates the use of medical gloves. The Order of the Ministry of Social Policy of Ukraine of 29.11.2018 No. 1804 approved methodological recommendations ‘On minimum safety and health requirements for the use of personal protective equipment by the workers in their workplace’. In May 2019, at the 72nd session of the World Health Assembly in Geneva, Ukrainian delegation took part in the discussion of patient safety in the provision of healthcare medical care. On September 4th, 2019, the Patient Safety Day was established in Ukraine by the decree of the President.

Results:

Nowadays there is a wide range of gloves. They are made of different materials (latex, nitrile, neoprene etc.), produced in different sizes (surgical: from 5-5.5 to 9-9.5; diagnostic – XS, S, M, L, XL), colors (colorless, light blue, blue, black, purple, pink and other- the color marks the material the glove is made of), shapes (universal-no difference for the right and left hand, anatomical – with differences for the right and left hand), packaging type (sterile gloves are individually packed one pair per package, and for double gloves – two in a package; non-sterile gloves are packed in a cardboard box from 50 to 100 pairs in one package or can be packed in a glove dispenser). They have specific characteristics for each type, etc.

The technical characteristics of gloves are determined by the European standards: EN 455 – disposable medical gloves, EN 420 – defines the general requirements for the protective gloves – ergonomics, quality of the material, harmlessness, size, practicality, level of protection and other



characteristics. EN 374 – defines the level of protection against chemicals and microorganisms; EN 388 – defines the level of protection against mechanical damage. Each packaging has a pictogram that has numbers to indicate the level of protection. In recent years, the AVPP test – a dynamic test for resistance to blood-borne infections, has been carried out during a regular work shift. It is used to assess the barrier protection against viruses during flexion - extension, pressure, friction.

Specific knowledge is required to make the right choice of a medical gloves (Bearman et al., 2014). Medical staff must understand and know about the importance and utter necessity of the safe working conditions: be familiar with the characteristics of various types and kinds of gloves, analyze the possible risks of infection in order to understand when and for what purpose (surgery, manipulation, procedure) they need to and can be used.

The use of gloves is neither a substitute for a hand washing with soap and water, nor for a hygienic or surgical hand disinfection, but is an additional protective clothing accessory of the medical personnel outfit in prevention of HAIs.

The use of medical gloves is obligatory in all the cases where there is a potential contact with blood, other biological liquids, mucous membranes or non-intact skin. Medical gloves should only be put on clean and completely dry hands. No glove material can guarantee 100% protection against all infectious agents or chemicals, so hands should be disinfected after removing gloves.

The correct donning and doffing as well as the correct use (indications, suitability in size, integrity, wearing duration, etc.) prevents the contamination of the gloves and the hands of medical personnel. Gloves that were used must be disinfected. For this they are soaked in special containers (container for disinfection and pre-sterilization) with a disinfectant solution of a certain concentration and for a certain amount of time (according to the methodological recommendations of disinfectant). Afterwards, they are being rinsed, dried, and disposed of.

The material (latex, nitrile, vinyl and others), which is used to make gloves and the conditions of their use (the procedure types, manipulations, duration, work with biological body fluids, various medicinal, chemical substances etc.) affect their barrier function.

The glove characteristics, such as elasticity, degree of permeability, ease of donning, electrical conductivity, must be adapted for the peculiarities and specifics of the job of the healthcare workers. Latex is rightfully the number one material. Latex gloves are affordable, fit the hand properly, have high tactile sensitivity, tear strength, high resistance to



chemicals, but proteins and the powder contained in latex can cause various allergic reactions such as contact dermatitis, urticaria, Quincke's edema, even up to anaphylactic shock. The replacement (since 1997) of the powdered latex gloves by the powdered-free ones resulted in a reduction of latex allergy.

Nitrile gloves have become an alternative to the latex gloves. They are hypoallergenic, reliable, comfortable, highly resistant to tear, puncture, and cut, snugly fit the hand. These gloves are widely used in all medical fields.

The tactile gloves, made of mixture of styrene, ethylene and butadiene as well as the vinyl or PVC gloves are hypoallergenic, low-elastic, anatomical in shape, resistant to chemicals and are frequently used for the examination of the patient.

The materials used to manufacture modern medical gloves and the manufacturing technologies are constantly being improved. Lately, the synthetic gloves made of neoprene (chloroprene rubber) have become widely used. Due to their similarity of chemical structure with latex in elasticity and a high tactile sensitivity, they fit the hand snugly, what allows to reduce the fatigue of the hands of medical personnel during surgical interventions, various manipulations.

Neoprene gloves are extremely resistant to cytostatic, which makes them widely used in oncology. Suitable for a long-term use; resistant to potentially infected biological fluids (blood, semen, saliva, etc.), with aggressive chemicals, hypoallergenic.

The invention of chainmail gloves, invented for the safety of surgery and manipulations with a high risk of infection, fostered the worldwide decline in mortality rates among doctors from such dangerous infections as HIV/AIDS, hepatitis B, C. The chainmail gloves are made of a material that is resistant to cuts and punctures due to a special barrier layer. The creation of the double medical gloves (the lower glove differs from the upper in color) with a puncture indication reduces the risk of blood-borne infections by surgeons of different profile (gynecologists, ophthalmologists, otolaryngologists, etc.), doubled the protection and allowed to detect damage – a contrasting spot formed in the puncture area signals that there is a perforation, making it possible to replace the glove in time (Tietjen, 2003; Zueva, 2000).

Three-layer surgical gloves with an increased degree of protection have become an innovative breakthrough in medicine. Due to a micro-droplet disinfectant (a mixture of quaternary ammonium and biguanide-chlorhexidine digluconate) between the layers of the gloves, the risk of infection for medical personnel and patients has been reduced.



In the event of an accidental puncture or cut, the release of the disinfectant liquid at the injury site immediately provides protection. They are used in all types of surgical operations, but are especially appreciated in orthopedics and obstetrics.

Conclusions:

Medical gloves are a mandatory attribute of medical clothing. The use of medical gloves is a versatile preventive measure that considerably reduces the risk of healthcare-associated infections. Improvement of materials and manufacturing technologies can significantly improve the quality of medical gloves, expand the scope of their application and seriously raise the level of barrier protection against all kinds of infectious agents and chemicals.

Conflicts of interests:

The author declares that there is no conflict of interests.

Source of support:

This research did not receive any outside funding or support.

References

- Bearman, G. M. L., Stevens, M., Edmond, M. B., & Wenzel, R. P. (2014). *A Guide to infection control in the hospital* (5th ed.). ISID. https://www.dpsv.ro/uploads/epidemiologie/5thEd_GuideInfectionControl_forWEB.pdf
- Kampf, H. (Ed.). (2005). *Hyhyena ruk v zdravookhranenny [Hand hygiene in healthcare]*. Zdorovia. <https://www.twirpx.com/file/1293542/> [in Russian]
- Laine, T., & Aarnio, P. (2004). Glove perforation in orthopaedic and trauma surgery. A comparison between single, double indicator gloving and double gloving with two regular gloves. *The Journal of Bone and Joint Surgery*, 86(6), 896–900. <https://doi.org/10.1302/0301-620x.86b6.14821>
- Mischke, C., Verbeek, J. H., Saarto, A., Lavoie, M. C., Pahwa, M., & Ijaz, S. (2014). Gloves, extra gloves or special types of gloves for preventing percutaneous exposure injuries in healthcare personnel. *The Cochrane database of systematic reviews*, 3, CD009573. <https://doi.org/10.1002/14651858.CD009573.pub2>
- Shalimov, A. A., Grubnik, V. V., Tkachenko, A. I., Osipenko, O. V., & Chetverikov, S. G. (2001). *Infekcionnyj kontrol v hirurgii [Infection control in surgery]*. <https://www.twirpx.com/file/530232/> [in Russian]



- Tanner, J., & Parkinson, H. (2002). Double gloving to reduce surgical cross-infection. *The Cochrane database of systematic reviews*, 3, CD003087. <https://doi.org/10.1002/14651858.CD003087>
- Tietjen, L., Bossemeyer, D., & McIntosh, N. (2003). *Infection prevention guidelines for healthcare facilities with limited resources*. JHPIEGO Corporation. https://pdf.usaid.gov/pdf_docs/Pnact433.pdf
- Zueva, L. P. (Ed.). (2000). *Rekomendacii po mytju i antiseptike ruk. Perchatki v sisteme infekcionnogo kontrolja [Recommendations for hand washing and antisepsis. Gloves in the infection control system]*. Center for Infection Control. <https://window.edu.ru/catalog/pdf2txt/310/58310/28231> [in Russian]

Information about the author:

Iarmak Tatiana Viktorivna – <https://orcid.org/0000-0001-5371-2958>;
Lecturer of the Department of Advanced Training of Junior Medical Specialists, Municipal Health Care Institution “Kharkiv Regional Medical College”, Kharkiv, Ukraine.
Research interests: medicine, education, psychology, new technologies.

Cite this article as:

Iarmak, T. V. (2021). Medical gloves and their importance for the safety of patients and medical personnel. In Yu. B. Melnyk, & L. M. Georgieva (Eds.), *Current Issues of Education and Science. 9th International Conference, CIES-2021, Riga, Latvia – Kharkiv, Ukraine, November 10–13, 2021, Conference proceedings* (pp. 104–110). KRPOCH. <https://doi.org/10.26697/9786177089147.2021.13>

Copyright information:



The published paper are licensed under a Creative Commons “Attribution” 4.0 Worldwide



The electronic version of this article is complete. Full or partial reproduction of article is allowed, citing to the source, author(s) and DOI. An electronic copy of the Conference proceedings in open access is available via the KRPOCH Publishing website <https://publisher.culturehealth.org>

Scientific edition

CURRENT ISSUES OF EDUCATION AND SCIENCE

Conference Proceedings

IX International Scientific and Practical Conference
(November 10–13, 2021, Riga, Latvia – Kharkiv, Ukraine)

ISBN 978-617-7089-14-7

DOI 10.26697/9786177089147.2021

Editors

Melnyk Yuriy Borysovykh

Georgieva Lidia Mladenova

Technical editing, proofreading,
computer page positioning and layout: I. S. Pypenko
Designer: Ya. Yu. Sviachena

Authors of the papers are responsible for the information reliability.

Editors do not always share the views and thoughts of the authors.

Conference proceedings design is the property of the KRPOCH Publishing.

Published on the initiative of the Scientific Research Institute KRPOCH.

Format 60x84/16

Digital printing

Conv. printing sheet 6.51. Order No. 1-32

100 copies

Scientific Research Institute KRPOCH

<https://institute.culturehealth.org>

Kharkiv Regional Public Organization “Culture of Health”

Zabaikalskyi lane, 6, of. 6, Kharkiv, Ukraine, 61105

Email: KhRPOCH@gmail.com Tel: +38 066 239 77 75

URL: <https://publisher.culturehealth.org>

Certificate to registration

ДК № 4387, 10.08.2012

Наукове видання

АКТУАЛЬНІ ПИТАННЯ ОСВІТИ І НАУКИ

Матеріали конференції

IX міжнародна науково-практична конференція
(Латвія, Рига – Україна, Харків, 10–13 листопада, 2021 р.)

ISBN 978-617-7089-14-7

DOI 10.26697/9786177089147.2021

Редактори

Мельник Юрій Борисович

Георгієва Лідія Младенова

Технічне редагування, коректура,
комп'ютерне складання та верстання: І. С. Пипенко
Художній редактор: Я. Ю. Свячена

Відповідальність за достовірність інформації несуть автори статей.

Редактори не завжди поділяють думки і позиції авторів.

Дизайн оформлення матеріалів конференції є власністю ХОГОКЗ.

Видано при сприянні науково-дослідного інституту ХОГОКЗ.

Формат 60x84/16

Гарн. «Times». Папір для мн. ап. Друк цифровий.

Ум. друк. арк. 6,51. Зам. № 1-32

Тираж 100 пр.

Науково-дослідний інститут ХОГОКЗ

<https://institute.culturehealth.org>

Харківська обласна громадська організація “Культура Здоров’я”

Пров. Забайкальський, 6/6, м. Харків, Україна, 61105

Email: KhROCH@gmail.com Tel: +38 066 239 77 75

URL: <https://publisher.culturehealth.org>

Свідоцтво про державну реєстрацію видавництва

ДК № 4387 від 10.08.2012

KRPOCHI Publishing

KRPOCHI Publishing invites Authors to cooperation

Publication types:

Books and Monographs



Conference Proceedings



Scientific Periodical Peer-Reviewed Journals



Textbooks and Manuals



**For more information, see the website:
www.publisher.culturehealth.org**

ISBN: 978-617-7089-14-7
DOI: 10.26697/9786177089147.2021
BIG JNEK
BISAC EDU034000

