

## REVIEW ARTICLE

# THE THEORETICAL AND LEGAL BASIS FOR ENVIRONMENTAL RISK AS A POSSIBLE MEASUREMENT OF HARM TO THE ENVIRONMENT AND HUMAN HEALTH

10.36740/WLek202011134

**Vitalii M. Pashkov<sup>1</sup>, Maryna V. Trotska<sup>2</sup>, Andrii O. Harkusha<sup>1</sup>**<sup>1</sup>DEPARTMENT OF CIVIL, COMMERCIAL AND FINANCIAL LAW, POLTAVA LAW INSTITUTE, POLTAVA, UKRAINE<sup>2</sup>DEPARTMENT OF CONSTITUTIONAL, ADMINISTRATIVE, ENVIRONMENTAL AND LABOUR LAW, POLTAVA LAW INSTITUTE, POLTAVA, UKRAINE**ABSTRACT**

**The aim:** To inquire into a theoretical and legal basis that regulates relevant areas and processes; use of certain objects, associated with ecological risks, which association, in turn, indicates the likelihood of conditions that can have adverse effects on the environment, human life and well-being.

**Materials and methods:** In this work we study statutory regulations and scientific positions of scholars regarding the above-mentioned issue. The study analyses generalized information from scientific journals employing scientific methods from a medical and legal perspective. This article is based on dialectical, comparative, analytic, synthetic, and comprehensive research methods.

**Conclusions:** The importance of the issue of environmental risks reflects the need in solving the problem of coexistence between human beings and nature. The analysis of theoretical and legal basis within the outlined framework will allow detecting the gaps and will help to understand in what way they are surmountable while regulating the stressors associated with ecological risks, on one hand, and, on another hand – the possible consequences, in order to prevent and eliminate them as promptly as possible and, thus, minimize their adverse effects on the environment and the health of the population.

**KEY WORDS:** risk, environmental risk, environmental risk assessment, health, natural environment, environment

Wiad Lek. 2020;73(11):2523-2527

**INTRODUCTION**

The world is facing multiple health challenges that range from outbreaks of vaccine-preventable diseases like measles and diphtheria, increasing reports of drug-resistant pathogens, growing rates of obesity and physical inactivity to the health impacts of environmental pollution and climate change and multiple humanitarian crises [1]. Since a healthy environment is a prerequisite for a healthy population, and environmental factors underlie the significant burden in terms of mortality and morbidity in the developing world. It requires a holistic, comprehensive and integrated approach to health and environment to protect both the environment and public health [2]. Accordingly, the study of ecological risks issue is crucial for developing the necessary approaches that can eliminate possible negative consequences. Some issues concerning the impact of certain stressors on the environment, in general, and therefore on the health of the population, in particular, have been covered by individual authors [3-8], but it is the outlined question itself that needs more in-depth study. Environmental problems and impacts continue to pose significant risks for human health and well-being, whereas measures to improve the state of the environment can be beneficial (Preamble, para. 25 Decision No 1386/2013/EU of the European Parliament and of the Council of 20 November 2013 on a General Union Environment Action

Programme to 2020 'Living well, within the limits of our planet' [9]).

Human health and well-being are intimately linked to the state of the environment. Good quality natural environments can provide multiple benefits to physical, mental, and social well-being. However, environmental deterioration – such as that caused by air and water pollution, noise, radiation, chemicals or biological agents – can have adverse effects on health [10, p. 115]. Achieving a healthy and sustainable environment is a key ingredient for preventing diseases and enabling viable health care [11, p. 1]. In other words, the appropriate environmental conditions, as a result of certain circumstances, among other things, are related to in-deep comprehension of ecological risk, namely, its stressors and potential consequences, and thus, directly or indirectly, reflect on the environment and human health. Risk is defined as the probability that a substance or situation will produce harm under specified conditions. Risk is a combination of two factors: • the probability that an adverse event will occur (such as a specific disease or type of injury); • the consequences of the adverse event. Risk encompasses impacts on public health and on the environment and arises from exposure and hazard. Risk does not exist if exposure to a harmful substance or situation does not or will not occur. Hazard is determined by whether a particular substance or situation

has the potential to cause harmful effects [12, p. 1].

The issue of environmental risk study is important for understanding the likelihood of negative effects on the environment in general, which, in turn, might, directly or indirectly, affect human health. There are currently many contaminated sites in the Community, posing significant health risks, and the loss of biodiversity has dramatically accelerated over the last decades. Failure to act could result in increased site contamination and greater loss of biodiversity in the future. Preventing and remedying, insofar as is possible, environmental damage contributes to implementing the objectives and principles of the Community's environment policy as set out in the Treaty (Preamble, para.1) Directive 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage [13]). The impact of environmental risk factors on health are extremely varied and complex in both severity and clinical significance. For example, the effects of environmental degradation on human health can range from death caused by cancer due to air pollution to psychological problems resulting from noise [14]. In recent years ecological risks (threats to the health and productivity of species and ecosystems) have also arisen as a topic of great public concern, in parallel with heightened attention to resource sustainability and concern over environmental degradation [15, p. 575]. In particular, achieving the 2050 vision, it focuses on three key areas: protecting the natural capital that supports economic prosperity and human well-being; stimulating resource-efficient, low-carbon economic and social development; safeguarding people from environmental health risks [10, p. 10]. Therefore, the study of outlined issues is quite topical in the context of a comprehensive understanding of potentially negative consequences and correlative causing factors.

## THE AIM

To inquire into a theoretical and legal basis that regulates relevant areas and processes; use of certain objects, associated with ecological risks, which association, in turn, indicates the likelihood of conditions that can have adverse effects on the environment, human life and well-being.

## MATERIALS AND METHODS

For a comprehensive study of the outlined topic we need to define the notion of ecological risk. In particular, as stated in para. 15 part 1 art. 3 Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/E [16]: 'risk' means the likelihood of a specific effect occurring within a specified period or in specified circumstances. Risk – the probability of a specific outcome, generally adverse, given a particular set of conditions [12, p. 62]. In turn, according to para. 4 'Environmental risk' Division 2 'Definitions' Chapter 1 'General

Provisions' General Part of the Environmental Code Act Passed: 'environmental risk' means the possibility of occurrence of an environmental nuisance that needs to be reduced [17]. In addition, as noted in dictionary sources, environmental risk – actual or potential threat of adverse effects on living organisms and environment by effluents, emissions, wastes, resource depletion, etc., arising out of an organization's activities [18]. Environmental risk – the risk associated with economic or administrative consequences of slow or catastrophic environmental pollution [19]. The environmental risks to health are defined as all the external physical, chemical, biological, and work-related factors that affect a person's health, excluding factors in natural environments that cannot reasonably be modified [20].

Thus, having regard to the above, we can sum up that ecological risk is associated with adverse effects on the environment in general and nature in particular, which can also affect human health negatively. Environmental risk factors, such as air, water and soil pollution, chemical exposures, climate change and ultraviolet radiation, contribute to more than 100 diseases and injuries [21]. Environmental hazards increase the risk of cancer, heart disease, asthma, and many other illnesses. These hazards can be physical, such as pollution, toxic chemicals, and food contaminants, or they can be social, such as dangerous work, poor housing conditions, urban sprawl, and poverty [22]. Accordingly, the source of the stressors can be different materials, substances or circumstances, which, due to its nature, are able to become factors causing harm.

## REVIEW AND DISCUSSION

While studying the nature of ecological risk, let's pay attention to its components. This will help us to understand it's essence better.

Firstly, the ecological risk is associated with certain factors, which indicate its existence. At every stage of their life – from conception to death – organisms are exposed to a multitude of environmental factors, some of which are associated with severe health risks [23]. These are the factors that have a natural or man-made origin and create a certain hazard. Environmental risk and protective factors encompass a broad range of factors related to socio-economic, ethnocultural, political, and policy conditions, as well as factors related to the natural and built environment [24]. Some are created by man through the introduction of new technology, product, or chemical, while others, such as natural hazards, result from natural processes that happen to interact with human activities and settlements. Some can be reasonably well anticipated, such as flooding in a valley or pollution from an industrial smelter. Others are wholly unsuspected effects at the time the technology or activity was developed, such as the possible effects on the earth's ozone layer of fluorocarbon sprays or nitrogen fertilizers [25, p. 3]. According to some authors, the actualization of ecological risks occurs as a result of exposure to harmful factors, they cause accidents, which interfere with normal living conditions [26, p. 157]. Environmental risk factors

cover a wide range of topics such as social, economic, cultural and political factors as well as physical, chemical and biological factors. Examples include access to clean water and sanitation; risks in the workplace; air pollution; social settings [27]. Environmental risks to health include pollution, radiation, noise, land use patterns, work environment, and climate change [20].

Among environmental risks, there are such factors causing diseases: pollution; microbes in the air, water, or soil; contaminants in food; weather conditions (e.g. droughts, heat waves); natural disasters (e.g. hurricanes, earthquakes, floods); pesticides and other chemicals; pests and parasites; radiation; poverty; lack of access to health care [22]. For instance, as stated in Preamble, para.6 Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC [16]: major accidents can have consequences beyond frontiers, and the ecological and economic costs of an accident are borne not only by the establishment affected but also by the Member States concerned. It is therefore necessary to establish and apply safety and risk-reduction measures to prevent possible accidents, to reduce the risk of accidents occurring, and to minimize the effects if they do occur, thereby making it possible to ensure a high level of protection throughout the Union. In Preamble, para. 3 Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks [28]: it is feasible and desirable to reduce the risk of adverse consequences, especially for human health and life, the environment, cultural heritage, economic activity and infrastructure associated with floods. However, measures to reduce these risks should, as far as possible, be coordinated throughout a river basin if they are to be effective. Therefore, the occurrence of ecological risks is connected with different areas, processes and objects, that can harm the life and the health of the population as well as the environment in general.

Secondly, there are might be relevant consequences which will have a negative impact on the environment, life and health of the population. Consequence (or impact) – the outcome (of an event), expressed qualitatively in terms of the level of impact. Consequences can be measured in terms of economic, social, environmental or other impacts [29]. Environmental health hazards affecting human health are most commonly classified as chemical, biological, physical, mechanical, and psychological [30, p. 14]. Their occurrence depends on the very factors that are their precursors. Accordingly, those two components are closely interrelated, namely, the clearer the origin of the potential hazard, the more possible it will be to assess the likely consequences. Environmental health is an area of growing concern due to major global environmental changes and an increase in established links between several diseases and environmental exposures [31]. Hence, for the study of the concept of ecological risk this assessment is quite important. For instance, in Preamble, para. 9. Di-

rective 2009/41/EC of the European Parliament and of the Council of 6 May 2009 on the contained use of genetically modified microorganisms [32] is stated that the precise nature and scale of risks associated with the contained use of GMMs are not yet fully known and the risk involved must be assessed on a case-by-case basis. In order to evaluate the risk to human health and the environment, it is necessary to lay down requirements for risk assessment. In Preamble, para. 22 Regulation (EU) 2019/6 of the European Parliament and of the Council of 11 December 2018 on veterinary medicinal products and repealing Directive 2001/82/EC [33]: where a Member State, the Commission or the marketing authorization holder considers that there are reasons to believe that a veterinary medicinal product could present a potential serious risk to human or animal health or to the environment, a scientific evaluation of the product should be undertaken at Union level, leading to a single decision on the area of disagreement, binding on the relevant Member States, and taken on the basis of an overall benefit-risk assessment. For all new applications for marketing authorization, environmental risk assessments should be mandatory and should consist of two phases. In the first phase, the extent of environmental exposure to the product, its active substances and other constituents should be estimated, while in the second phase the effects of the active residue should be assessed (Preamble, para. 31).

Environmental risk assessment is a process for estimating the likelihood or probability of an adverse outcome or event due to pressures or changes in environmental conditions resulting from human activities [34, p. iii]. Environmental risk assessment is the process undertaken to identify, evaluate and apply mitigation and control measures to the potential environmental risk of proposed development [35, p. 6-1].

According to some authors, assessment of the risk results in developing certain understanding regarding the classification of stressors (causing factors) and possible consequences of their impact [36, p. 52]. Classification criteria can have different origin, for example, by a certain area of impact, the time interval of occurrence, existence and eliminating of consequences, the priority of objects of relevant impact and indirect impact on other objects, etc. The process of risk assessment is based on those classification criteria, which, on one hand, allows us to have an in-depth approach to such procedure, and on the other hand, to get more precise forecasts and apply the results in other cases too, as fully as it is possible.

Risk assessment is defining as human exposure to environmental hazards causing a potential threat to adverse health effects [37]. Risk assessment is where the severity of the hazard and its potential outcomes are considered in conjunction with other factors including the level of exposure and the number of persons exposed and the risk of that hazard being realized [38]. Risk assessment – an organized process used to describe and estimate the likelihood of adverse health outcomes from environmental exposures to chemicals. The four steps are hazard identification, dose-response assessment, exposure assessment,

and risk characterization [12, p. 61]. Environmental risk assessment means the forecast for the likelihood that particular adverse consequences, considering the nature of their origin, will occur for the environment in general as well as for human health in particular, which should contribute to the development of appropriate measures to prevent their occurrence and occurrence of the disease, and the choice of appropriate treatment in the case.

Referring to judicial practice in the outlined framework, the improper evaluation of the ecological risks itself or neglecting it at all leads to the violation of human rights and adverse effects on the environment and, accordingly, on human health.

For instance, case of *Guerra and Others v. Italy*. This case dealt with the failure to provide the local population with information about risk factors and how to proceed in the event of an accident at a nearby chemical factory. The question was whether national authorities had taken the necessary steps to ensure effective protection of the applicants' right to respect for their private and family life. Severe environmental pollution could affect the individuals' well-being and prevent them from enjoying their homes in such a way as to affect their private and family life adversely. The applicants had waited, right up until the production of fertilizers had ceased in 1994, for essential information that would have enabled them to assess risks they and their families might run if they continued to live around the factory. The court awarded each applicant a specific sum as non-pecuniary damage [39]. In the case of *Tetar v. Romania* the Court observed that where pollution or noise interfered with a person's well-being, a claim could be brought under article 8 (right to respect for private and family life) and that the existence of a serious and material risk for the applicants' health and well-being entailed a duty on the part of the State to assess the risks, both at the time it granted the operating permit and subsequent to the accident, and to take the appropriate measures. The European Court of Human Rights held that there had been a violation of the right to respect for private and family life on account of the Romanian authorities' failed to protect the applicants who lived in the vicinity of the Baia Mare Aurul gold mine [40].

## CONCLUSIONS

Thus, the study of the components in the concept of 'ecological risk' and their appropriate legal regulation is essential, on one hand, for determining specific factors related to the likelihood of the negative consequences, and on the other – understanding their nature we can minimize the negative impact in case of their occurrence by implementing appropriate preventative measures.

## REFERENCES

1. Ten threats to global health in 2019 / Home / News / Feature stories / Detail / Ten threats to global health in 2019 Available at: <https://www.who.int/vietnam/news/feature-stories/detail/ten-threats-to-global-health-in-2019>
2. Jai P. Narain The challenge of health & environment: Profiling risks & strategic priorities for now & the future Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3461729/>
3. Pashkov V., Batyhina O., Trotska M. Legal Restraints of Pesticide Effect on Human Organism and Environment under International Legislation. *Wiad Lek.* 2017; 2: 366-372.
4. Pashkov V., Batyhina O., Trotska M. Concept of Waste and Its Impact on Human Health. *Wiad Lek.* 2017; 5: 964-969.
5. Gutorova N., Batyhina O., Trotska M. Legal protection of public health through control over genetically modified food. *Wiad Lek.* 2018; 2: 366-370.
6. Pashkov V., Trotska M. Natural environment as component of public health: some aspects of its legal regulation. *Wiad Lek.* 2019; 2: 261-267.
7. Vitalii M. Pashkov, Maryna V. Trotska, Oleksii S. Soloviov Right to child health in context of natural environmental security. *Wid Lek.* 2019; 3: 418-425.
8. Antonina H. Bobkova, Maryna V. Trotska Safe Natural Environment as Guarantee of Exercising the Right to Health. *Wiad Lek.* 2019; 8: 1571-1576.
9. Decision No 1386/2013/EU of the European Parliament and of the Council of 20 November 2013 on a General Union Environment Action Programme to 2020 'Living well, within the limits of our planet' Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1592986405782&uri=CELEX:32013D1386>
10. The European environment – state and outlook 2015: synthesis report, 2015. – 205 pp.
11. Preventing non-communicable diseases (NCDs) by reducing environmental risk factors Geneva: World Health Organization; 2017 Available at: <https://apps.who.int/iris/bitstream/handle/10665/258796/WHO-FWC-EPE-17.01-eng.pdf;jsessionid=15D6365E510EB252A43CA36F75A22E?sequence=1>
12. Framework for Environmental Health Risk Management. The Presidential/Congressional Commission on Risk Assessment and Risk Management. Final Report. Volume 1. 1997 Available at: <http://elibrary.cenn.org/Environment%20and%20Health/Framework%20for%20Environmental%20Health%20Risk%20Management.pdf>
13. Directive 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1592986405782&uri=CELEX:32004L0035>
14. Human Health and the Environment // OECD ENVIRONMENTAL OUTLOOK Available at: <http://www.oecd.org/health/health-systems/32006565.pdf>
15. Timothy McDaniels, J Lawrence J. Axelrod, and Paul Slovic Characterizing Perception of Ecological Risk. *Risk Analysis.* 1995; 5: 575-588 Available at: <http://www.geo.mtu.edu/volcanoes/06upgrade/Social-KateG/Attachments%20Used/EcologicalRisk.pdf>
16. Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1592986405782&uri=CELEX:32012L0018>
17. General Part of the Environmental Code Act Passed 16.02.2011 Available at: <https://www.riigiteataja.ee/en/eli/ee/523052019007/consolide/current>
18. Environmental risk. *Businessdictionary* Available at: <http://www.businessdictionary.com/definition/environmental-risk.html>
19. Environmental risk. The free dictionary by farlex Available at: <https://financial-dictionary.thefreedictionary.com/Environmental+risk>



20. Annette Prüss-Ustün and colleagues Environmental risks and non-communicable diseases Available at: <https://www.bmj.com/content/bmj/364/bmj.l265.full.pdf>
21. Public health, environmental and social determinants of health (PHE). World Health Organization Available at: [https://www.who.int/phe/health\\_topics/en/](https://www.who.int/phe/health_topics/en/)
22. David B. Resnik and Christopher J. Portier Environment, Ethics, Human Health Available at: <https://www.thehastingscenter.org/briefingbook/environmental-health/>
23. Prof. Dr. Günter Vollmer Environmental risk factor Available at: <http://www.int.laborundmore.com/archive/964772/Environmental-risk-factors.html>
24. Behavioural & Environmental Risk Factors. Epidemiology and Biostatistics Available at: [https://www.schulich.uwo.ca/epibio/research/research\\_clusters/areas\\_of\\_substantive\\_expertise/behav\\_%20enviro\\_risks.html](https://www.schulich.uwo.ca/epibio/research/research_clusters/areas_of_substantive_expertise/behav_%20enviro_risks.html)
25. 1.1.5 Environmental Risks. Chapter 1. Environmental Risks Available at: [https://www-legacy.dge.carnegiescience.edu/SCOPE/SCOPE\\_15/SCOPE\\_15\\_1.1\\_chapter1\\_1-14.pdf](https://www-legacy.dge.carnegiescience.edu/SCOPE/SCOPE_15/SCOPE_15_1.1_chapter1_1-14.pdf)
26. Dronova O.L. Hazards and risks in ecological state of geosystem assessment Available at: <http://dSPACE.nbu.gov.ua/bitstream/handle/123456789/7074/40-Dronova.pdf?sequence=1>
27. Risk factors in health and disease. 2.4 Environmental risk factors Available at: [https://www.eupati.eu/pharmacoepidemiology/risk-factors-health-disease/#Environmental\\_risk\\_factors](https://www.eupati.eu/pharmacoepidemiology/risk-factors-health-disease/#Environmental_risk_factors)
28. Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1593373428877&uri=CELEX:32007L0060>
29. Consequence (or impact). 6.2 Terminology. 6 Risk Assessment Available at: <https://www.mfe.govt.nz/publications/climate-change/climate-change-effects-and-impacts-assessment-guidance-manual-local-9>
30. Stephanie Chalupka Environmental Health An Opportunity for Health Promotion and Disease Prevention Available at: <https://journals.sagepub.com/doi/pdf/10.1177/216507990505300106>
31. Ashley Shepherd, Ruth Jepson, Andrew Watterson, and Josie M. M. Evans Risk Perceptions of Environmental Hazards and Human Reproduction: A Community-Based Survey Available at: <https://www.hindawi.com/journals/isrn/2012/748080/>
32. Directive 2009/41/EC of the European Parliament and of the Council of 6 May 2009 on the contained use of genetically modified micro-organisms (Recast) Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1593463447051&uri=CELEX:32009L0041>
33. Regulation (EU) 2019/6 of the European Parliament and of the Council of 11 December 2018 on veterinary medicinal products and repealing Directive 2001/82/EC (Text with EEA relevance) Available at: <http://data.europa.eu/eli/reg/2019/6/oj>
34. Environmental risk assessment (ERA): an approach for assessing and reporting environmental conditions. Habitat Branch Technical Bulletin 1 Ministry of Environment, Lands and Parks. July 2000 Available at: <http://www.env.gov.bc.ca/wld/documents/era.pdf>
35. Chapter 6. Environmental Risk Assessment Available at: [https://tellusholdings.com/wp-content/uploads/2019/07/ch-eis\\_chapter-06\\_environmental-risk-assessment.pdf](https://tellusholdings.com/wp-content/uploads/2019/07/ch-eis_chapter-06_environmental-risk-assessment.pdf)
36. Monarch V.V. Concepts and approaches to environmental risk assessment Available at: [http://nbuv.gov.ua/UJRN/mnj\\_2017\\_7\\_10](http://nbuv.gov.ua/UJRN/mnj_2017_7_10)
37. Sylvia Adipah Introduction of Human Health associated with Risk Assessment Available at: <http://www.fortunejournals.com/articles/pintroduction-of-human-health-associated-with-risk-assessmentp.html>
38. HAS. (2017). Health and safety authority. Healthy, safe and productive lives and enterprises. Hazard and Risk. Available at: <https://www.hsa.ie/eng/Topics/Hazards/>
39. Case of Guerra and Others v. Italy. Feb 19, 1998 Available at: [https://www.ecolex.org/details/court-decision/case-of-guerra-and-others-v-italy-a1113ab0-f99e-47d6-8076-1a51e18e353e/?q=environmental+risk&type=court\\_decision&xdate\\_min=&xdate\\_max=](https://www.ecolex.org/details/court-decision/case-of-guerra-and-others-v-italy-a1113ab0-f99e-47d6-8076-1a51e18e353e/?q=environmental+risk&type=court_decision&xdate_min=&xdate_max=)
40. Case of Tatar v. Romania. Jan 27, 2009 Available at: [https://www.ecolex.org/details/court-decision/affaire-tatar-v-roumanie-635b1e9a-860d-4415-9787-8eb8fe227595/?type=court\\_decision&q=environmental+risk&page=4](https://www.ecolex.org/details/court-decision/affaire-tatar-v-roumanie-635b1e9a-860d-4415-9787-8eb8fe227595/?type=court_decision&q=environmental+risk&page=4)

#### ORCID and contributionship:

Vitalii M. Pashkov: 0000-0001-9489-7768<sup>A,B,D,F</sup>

Maryna V. Trotska: 0000-0003-3420-0353<sup>A,B,D,E,F</sup>

Andrii O. Harkusha: 0000-0001-5266-3007<sup>B,D,E</sup>

#### Conflict of interest:

*The Authors declare no conflict of interest.*

---

#### CORRESPONDING AUTHOR

**Vitalii M. Pashkov**

Poltava Law Institute

Pershotravnevy Avenue, 5, 36011, Poltava, Ukraine

e-mail: [poltava\\_inst@nulu.edu.ua](mailto:poltava_inst@nulu.edu.ua)

**Received:** 08.07.2020

**Accepted:** 24.10.2020

---

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