

DOI: <https://doi.org/10.46502/issn.1856-7576/2023.17.04.17>

Cómo citar:

Hlinchuk, Y., & Piatakova, H. (2023). The impact of studying the life safety with the basics of labor protection course on the hardiness of future teachers. *Revista Eduweb*, 17(4), 183-196.
<https://doi.org/10.46502/issn.1856-7576/2023.17.04.17>

The impact of studying the life safety with the basics of labor protection course on the hardiness of future teachers

El impacto de estudiar el curso de seguridad de la vida con los fundamentos de la protección laboral en la resistencia de los futuros maestros

Yuliia Hlinchuk

WoS Researcher ID: AET-5163-2022

 <https://orcid.org/0000-0003-3328-5594>

Rivne State University of Humanities, Rivne, Ukraine.

Halyna Piatakova

 <https://orcid.org/0000-0003-2914-0843>

Ivan Franko National University of Lviv, Lviv, Ukraine.

Recibido: 20/07/23

Aceptado: 26/10/23

Abstract

The aim of the research is to determine the impact of studying Life Safety with Basics of Labor Protection course on the hardiness of future teachers (preschool teachers, primary school teachers, middle and high school teachers). The Maddi's Hardiness Survey (adapted by D. Leontyeva and O. Rasskazova) was used as a diagnostic tool, and Pearson's chi-squared test and Student's t-test were used for statistical analysis. It was found that the average hardiness indicators of future teachers – students majoring in Preschool Education, Primary Education and Secondary Education (by specializations) do not statistically differ from each other both before and after studying Life Safety with Basics of Labor Protection. However, studying Life Safety with Basics of Labor Protection has a statistically significant positive impact on the development of hardiness in students of these majors. Therefore, the results of the research can be the ground for improving the professional training of future teachers, who are responsible not only for personal but also for collective safety during the educational process. Prospects for further research are associated with checking the impact of studying safety subjects on the hardiness of students of other educational institutions and students of other majors in peacetime rather than wartime.

Key Words: hardiness, hardiness concept, Life Safety with Basics of Labor Protection course, students of pedagogical majors, threats.

Resumen

El objetivo de la investigación es determinar el impacto de estudiar el curso de Seguridad de Vida con Conceptos Básicos de Protección Laboral en la fortaleza de los futuros maestros (maestros de preescolar, maestros de escuela primaria, maestros de secundaria y preparatoria). Se utilizó la Encuesta de resistencia de Maddi (adaptado por D. Leontyeva y O. Rasskazova) como herramienta de diagnóstico, y la prueba de

chi-cuadrado de Pearson y la prueba t de Student se usaron para el análisis estadístico. Se encontró que los indicadores de rusticidad promedio de los futuros docentes - estudiantes de las carreras de Educación Preescolar, Educación Primaria y Educación Secundaria (por especialidades) no difieren estadísticamente entre sí tanto antes como después de cursar Seguridad de Vida con Fundamentos de Protección Laboral. Sin embargo, estudiar Seguridad de Vida con Fundamentos de Protección Laboral tiene un impacto positivo estadísticamente significativo en el desarrollo de rusticidad en los estudiantes de estas carreras. Por lo tanto, los resultados de la investigación pueden ser la base para mejorar la formación profesional de los futuros docentes, quienes son responsables no solo de la seguridad personal sino también colectiva durante el proceso educativo. Las perspectivas de futuras investigaciones están asociadas con la verificación del impacto de estudiar temas de seguridad en la resistencia de los estudiantes de otras instituciones educativas y estudiantes de otras carreras en tiempos de paz en lugar de tiempos de guerra.

Palabras clave: amenazas, curso de seguridad de vida con fundamentos de protección laboral, concepto de rusticidad, estudiantes de carreras de pedagogía, rusticidad.

1. Introduction

An analysis of current events suggests that rapid scientific and technological progress has not reduced the number of threats to humanity, but has led to their transformation and the emergence of new ones. One of the most striking proofs is the global COVID-19 pandemic and the Russian military invasion of Ukraine. If successful, it would most likely spread to other countries, as even now Russian pro-government channels are broadcasting threats and calls for nuclear strikes against NATO and the European Union. Even before Beck (2006) argued that humanity has now moved to a new phase of its development – a “risk society”: a society facing risks that are almost impossible to predict and correct.

Other experts argue that the former SPOD (stands for steady, predictable, ordinary, definite) world has been replaced by the VUCA (stands for volatility, uncertainty, complexity, ambiguity) world, and after the coronavirus pandemic, by the BANI (stands for brittle, anxious, nonlinear, incomprehensible) world (Chaliuk, 2022).

In such conditions, the role of internal resources of the individual, with hardiness being one of them, is increasing.

The author of the term “hardiness” is Kobasa (1979). In a narrow sense, it means a personal buffer resource against critical life events. In a broader sense, it is a holistic system that combines significant goals and values for the individual, self-adaptation, and behavioral styles determined by attitudes and beliefs about the world, the social environment, and one’s place in it (Chykhantsova, 2018).

It is quite clear that in the current conditions, an important social and pedagogical task is to develop people’s hardiness, in particular, at the stage of professional training. Kobasa and her follower Maddi prove that hardiness is not an innate but an acquired property of an individual (Maddi & Khoshaba, 1994).

In our opinion, it is especially important to develop hardiness in future educators, because they are responsible not only for themselves but also for students who spend a significant part of the day in educational institutions. In Ukraine, this is also the case during air raids and shelling of civilian infrastructure.

2. Literature review

It has become clear that hardiness is a rather complex and multifaceted phenomenon, as it affects the perception of stressful events and overcoming difficult life circumstances (Soderstrom et al., 2000);

manifestations of symptoms of diseases that arise as a result of stress (Kobasa et al., 1982); feelings of happiness and life satisfaction (Chykhantsova, 2021); students' time perspectives (Haghighatgoo & Besharat, 2011); mental endurance and stress resistance in professional activities (Bartone & Hystad, 2010), etc.

Tytarenko and Larina (2009) call hardiness a social necessity and link it to security.

Recent studies have shown that it helps to survive the COVID-2019 pandemic more easily. In particular, people with higher hardiness level show less anxiety and depression caused by the coronavirus pandemic (Bartone & Hystad, 2010). According to Oral and Karakurt (2022), hardiness reduces students' intolerance of uncertainty in a pandemic.

In the context of the Russian military invasion, the authors of this article note the findings on the role of hardiness in wartime.

Khosravi and Namani (2022) prove existence of a relationship between hardiness, self-compassion and family cohesion of women and men affected by war.

According to Miroshnikova (2022), hardiness is an important resource for students during the war calls, which can ensure success despite challenges. Her views coincide with those of Predko (2022), who argues that during wartime students are the most at-risk group, as they are left alone with their problems and fears in the context of distance learning. So, hardiness becomes the only effective mechanism for surviving the current total crisis.

It has also been found that hardiness contributes to better psychological adaptation of internally displaced higher school students (Bereziak et al., 2022).

In view of the above results, it becomes obvious how important the development of hardiness is for the individual, especially in the current difficult conditions. However, the theoretical analysis of the hardiness formation suggests that this process is studied mainly from the perspective of psychology. That is why the vast majority of studies on hardiness development primarily focus on students of psychological majors and professional (psychological) subjects: building hardiness through the use of psychological training; coping strategies for overcoming critical situations, etc. However, building hardiness of other higher school students, in particular, future teachers, remains unexplored. Accordingly, the issue of building hardiness remains unresolved not only in the process of studying special psychological subjects, but also in the process of studying general university subjects, in particular, Life Safety with the Basics of Labor Protection. The subject "Life Safety with the Basics of Labor Protection" consists of two modules: Life Safety and Basics of Labor Protection. We consider each of these modules to be promising in building students' hardiness for the following reasons.

According to the concept of hardiness (Maddi, 2006), the first component of hardiness is the involvement of the individual in life situations. And the basic axiom of life safety is the axiom of potential danger, according to which a person lives in conditions of constant danger (Zerkalov, 2011). At the same time, as mentioned above, human activity has led (and is likely to lead in the near future) to the emergence of new hazards: biological, chemical, radiation, etc. This implies that a person cannot stay uninvolved in dangerous life situations.

The second component of the concept of hardiness is control, which is the belief that one can influence the course of events and act accordingly. The main tasks that life safety solves are: identification of hazards, prevention of identified hazards and behavior in emergency situations (Zerkalov, 2011). When studying

Life Safety, students realize that hazards can be controlled, minimized, and learn how to act in the face of them.

The third component of the concept of hardiness is risk acceptance, and risk is a category of the field of knowledge of life safety. Moreover, one of the concepts of life safety is the concept of acceptable (permissible) risk, which is the understanding that there is no absolute security and the acceptance of the level of security that humanity can accept at this stage of its development (Zerkalov, 2011).

It is also quite obvious that when, for example, a person has gotten under fire, in a crowd or taken hostage, he/she needs to know first of all the rescue mechanism (or increase the chances of rescue) in such a situation. On the other hand, a person who has studied the dangers, ways to prevent or minimize them, and algorithms of behavior in the event of dangers will feel much more confident in a dangerous situation. In addition to the general hazards and risks that potentially threaten every person, there are hazards and risks that threaten professional activities. These are primarily occupational morbidity and occupational injuries, which can be minimized but not reduced to zero. When studying the module "Basics of Labor Protection", future teachers realize how professional activity can affect the quality of life in general and the state of the body in particular, and learn the basics of maintaining professional health and longevity. This is extremely important because teaching often has a negative impact on health. For example, Scheuch et al. (2015) found that educators are prone to hypertension and psychosomatic diseases, and often complain of such health disorders as exhaustion, overwork, headaches, and psychological stress.

Meshko N. and Meshko O. (2018) draw attention to the teachers' susceptibility to diseases caused by voice, visual, informational, nervous overload and insufficient physical activity.

At the theoretical level, the main provisions of life safety and labor protection correlate with the concept of hardiness (Figure 1). According to the concept of hardiness, the conceptual provisions of life safety, and the conceptual provisions of occupational safety and health, a person must be prepared for various adverse (critical) circumstances.

Along with the results of the theoretical analysis, the authors of this article also took into account that in informal communication, students repeatedly noted that after studying Life Safety with the Basics of Labor Protection they realized the inevitability of unfavorable, difficult or critical circumstances in the life of every person, but became more confident about the dangers, risks and threats in different environments.

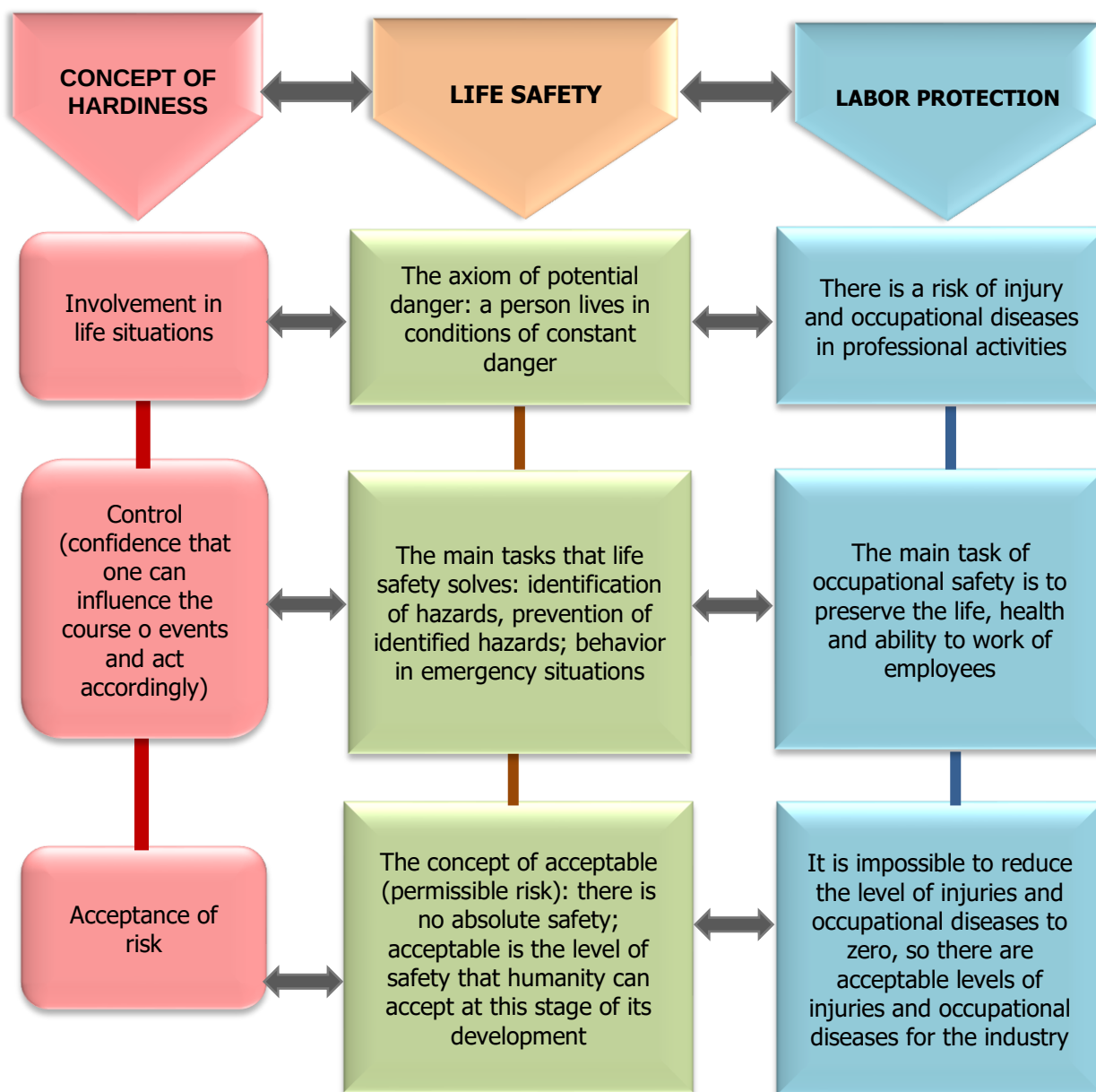


Figure 1. Correlation of the components of the concept of hardiness with the provisions of life safety and occupational safety.

The results of informal communication with students of pedagogical majors after the Russian full-scale invasion on February 24, 2022 were of particular interest for this study. For example, students who had not studied said that when the war began, they felt "fear", "fright", "daze", "numbness", and wondered if they would survive, etc.

On the other hand, students who studied Life Safety with the Basics of Labor Protection said they felt a "desire to escape", remembered "what to do in case of shelling, bombing, chemical attacks, etc.", "which places are the safest (most dangerous)", "how to leave the war zone and what to take with themselves", etc.

Together with the results of the theoretical analysis of this problem, this gave grounds to assume that the study of Life Safety with the Basics of Labor Protection contributes to the increase of students' hardiness.

Hypothesis:

Studying the Life Safety with the Basics of Labor Protection" course has a positive effect on the hardiness of future teachers.

Aim:

Determine the impact of studying the Life Safety with the Basics of Labor Protection course on the hardiness of future teachers (primary school teachers, middle and high school teachers).

3. Material and Methods

Research Design

The research was conducted in several stages. The first – exploratory and theoretical stage (September 2022) provided for a theoretical analysis of literature on the research problem. The second – experimental stage (October 2022 – April 2023) involved the selection of diagnostic technique and its application. The third – generalizing stage (May 2022) involved the analysis of the results, drawing conclusions, as well as providing recommendations for further research.

Participants

The study involved 134 students of pedagogical majors (45 students majoring in Preschool Education, 44 students majoring in Primary Education and 45 students majoring in Secondary Education (by specialization)). There were 106 female and 28 male; the students were in the 1st–4th year of study). The study was conducted during the 2022–2023 academic year (in accordance with the educational programs of their majors and the schedule of classes) at Rivne State University of Humanities and Ivan Franko National University of Lviv.

Instruments

To study hardiness, the authors of this research chose the diagnostic technique Muddi's Hardiness Survey (adapted by Leontiev and Raskazov, 2019). This is a questionnaire of 45 statements with the answer options "no", "rather no", "rather yes", "yes", reflecting such components of hardiness as commitment, control, and risk taking.

Data collection

The respondents' hardiness was diagnosed before and after studying Life Safety with the Basics of Labor Protection course: respondents took the Muddy's Hardiness Survey (adapted by Leontiev and Raskazov, 2019). They marked the selected answers in the questionnaire, and their hardiness indicators were determined (the survey was conducted through Google Form). Next, we the average statistical indicators of hardiness of future teachers were detimined as an arithmetic mean in the following areas: future teachers (Preschool Education), future primary school teachers (Primary Education), and future middle and high school teachers (Secondary Education (by specialization)).

Analysis of data

The normality of a distribution was checked using Pearson's chi-squared test (χ^2) (formula 1), while Student's t-test for the dependent samples was used to assess the significance of the difference (formula 2).

$$\chi^2 = \sum_{i=1}^m \frac{(X_{ei} - X_{ti})^2}{X_{ti}} \quad (1)$$

m – the number of intervals in the sample;

X_{ei} – the empirical frequencies;

X_{ti} – the theoretical frequencies;

Σ – the summation operator.

$$t = \frac{Md}{\sqrt{\frac{\sigma^2}{N}}} \quad (2)$$

Md – the average difference of values;

σ – the standard deviation of differences;

N – the number of respondents.

Ethical criteria

The research is based on the principles of academic integrity, respect for the individual, prevention of discrimination on any grounds. All respondents attended classes of the Life Safety with the Basics of Labor Protection course and voluntarily consented to participate in the study anonymously.

4. Results

The following findings were made as a result of applying Muddy's Hardiness Survey (adapted by Leontiev and Raskazov, 2019).

Prior to studying Life Safety with the Basics of Labor Protection, the indicator of involvement in life situations of students majoring in Preschool Education was 35.07; students majoring in Primary Education – 36.14; students majoring in Secondary Education – 38.98.

The indicator of control of students majoring in Preschool Education was 26.09; students majoring in Primary Education – 26.95; students majoring in Secondary Education – 29.02.

The indicator of risk acceptance of students majoring in Preschool Education was 12.05; students majoring in Primary Education – 12.25; students majoring in Secondary Education – 13.70.

Accordingly, the indicator of hardiness of students majoring in Preschool Education was 73.18; students majoring in Primary Education – 75.34; students majoring in Secondary Education – 81.70 (Table 1).

Table 1.*Indicators of students' hardiness before studying Life Safety with the Basics of Labor Protection*

Major	Involvement	Control	Risk acceptance	Hardiness
Preschool Education	35.07	26.09	12.02	73.18
Primary Education	36.14	26.95	12.25	75.34
Secondary Education	38.98	29.02	13.70	81.70

The analysis of the data obtained by using Pearson's chi-squared test (Table 2) showed that the empirical values of the indicators of involvement in life situations, control and risk acceptance in particular, and indicators of hardiness in general for the three pedagogical majors are less than the critical values, and, therefore, correspond to the normal distribution law (Table 3).

Table 2.*Analysis of indicators of students' hardiness before studying Life Safety with the Basics of Labor Protection using Pearson's chi-squared test*

Major	Involvement		Control		Risk acceptance		Hardiness	
	xc	χ^2	xc	χ^2	xc	χ^2	xc	χ^2
Preschool Education	35.07±0.33	0.10	26.09±0.24	0.06	12.02±0.17	0.03	73.18±0.44	0.19
Primary Education	35.14±0.14	0.02	26.95±0.32	0.01	12.25±0.14	0.01	75.34±0.20	0.04
Secondary Education	38.98±0.32	0.10	29.02±0.30	0.10	13.70±0.28	0.09	81.70±0.51	0.28

Table 3.*Assessment of the normality of the distribution of indicators of students' hardiness before studying Life Safety with the Basics of Labor Protection*

Indicators of viability	Involvement	Control	Risk acceptance	Hardiness
Pearson's chi-squared test	0.22	0.17	0.13	0.51
Significance level	0.05<p<0.95	0.05<p<0.95	0.05<p<0.95	0.05<p<0.95

This means that the hardiness of future preschool teachers, future primary school teachers, and future middle and high school teachers before studying Life Safety with the Basics of Labor Protection is not statistically different.

Re-application of Muddy's Hardiness Survey (adapted by Leontiev and Raskazov, 2019) after studying Life Safety with the Basics of Occupational Safety showed that the indicator of involvement in life situations of students majoring in Preschool Education was 43.04; students majoring in Primary Education – 44.07; students majoring in Secondary Education – 47.04.

The indicator of control of students majoring in Preschool Education" was 31.98; students majoring in Primary Education – 32.05; students majoring in Secondary Education – 34.07.

The indicator of risk acceptance of students majoring in Preschool Education was 16.95; students majoring in Primary Education – 17.07; students majoring in Secondary Education – 19.13.

Accordingly, the indicator of hardiness of students majoring in Preschool Education was 91.97; students majoring in Primary Education – 93.19; students majoring in Secondary Education – 100.24 (Table 4).

Table 4.

Indicators of students' hardiness after studying Life Safety with the Basics of Labor Protection

<i>Specialty</i>	Involvement	Control	Risk acceptance	Hardiness
Preschool Education	43.04	31.98	16.95	91.97
Primary Education	44.07	32.05	17.07	93.19
Secondary Education	47.04	34.07	19.13	100.24

After studying Life Safety with the Basics of Labor Protection, all indicators of hardiness increased. In general, the hardiness of students majoring in Preschool Education increased by 18.79 (by 25.68%); students majoring in Primary Education – by 17.85 (by 23.69%); students majoring in Secondary Education – by 18.54 (by 22.69%) (Table 5).

Table 5.

Increase in students' hardiness after studying Life Safety with the Basics of Labor Protection

<i>Major</i>	HARDINESS			
	Before studying Life Safety with the Basics of Labor Protection	After studying Life Safety with the Basics of Labor Protection	Increase	Increase in %
Preschool Education	73.18	91.97	18.79	25.68 %
Primary Education	75.34	93.19	18.79	23.69 %
Secondary Education	81.70	100.24	18.54	22.69 %

The analysis of students' hardiness indicators after studying Life Safety with the Basics of Labor Protection according to Pearson's chi-squared test (Table 6) showed that the empirical values are less than the critical values. Therefore, there is compliance with the normal distribution law (Table 7).

Table 6.

Analysis of indicators of students' hardiness after studying Life Safety with the Basics of Labor Protection using Pearson's chi-squared test

<i>Major</i>	Involvement		Control		Risk acceptance		Hardiness	
	xc	χ²	xc	χ²	xc	χ²	xc	χ²
Preschool Education	43.04±0.24	0.06	31.98±0.14	0.02	16.95±0.17	0.03	91.97±0.20	0.04
Primary Education	44.07±0.10	0.01	32.05±0.10	0.01	17.07±0.14	0.02	93.19±0.32	0.11
Secondary Education	47.04±0.33	0.12	34.07±0.24	0.06	19.13±0.32	0.11	94.81±0.48	0.25

Table 7.

Assessment of the normality of the distribution of students' hardiness indicators after studying Life Safety with the Basics of Labor Protection

Indicators of viability	of	Involvement in life situations	Control	Risk acceptance	Hardiness
Pearson's chi-squared test		0.19	0.09	0.16	0.43
Significance level		0.05<p<0.95	0.05<p<0.975	0.05<p<0.95	0.05<p<0.95

As the indicators of hardiness before and after the study of Life Safety with the Basics of Labor Protection corresponded to a normal distribution, the Student's t-test was chosen for the dependent samples (because the respondents were the same) to analyze the statistical significance of the change in hardiness indicators. As a result, the change in hardiness indicators was found statistically significant (Table 8).

Table 8.

Analysis of the change in students' hardiness indicators before and after studying Life Safety with the Basics of Labor Protection using Student's t-test

Indicators of viability	of	Involvement	Control	Risk acceptance	Hardiness
Student's t-test		199.75	19.81	26.63	131.00
Significance level		p<0.001	0.001<p<0.01	0.001<p<0.01	p<0.001

So, it was found that the average indicators of hardiness of future teachers – students majoring in Preschool Education, Primary Education and Secondary Education (by specialization) do not differ statistically both before and after studying the Life Safety with the Basics of Labor Protection course. However, the study of the Life Safety with the Basics of Labor Protection course has a statistically significant positive impact on the development of hardiness of students of these majors.

So, the advanced hypothesis was confirmed.

5. Discussion

Authors' view of the importance of the role of hardiness in the face of current hazards is consistent with the findings of Kuzikova et al. (2021), who argue that the current reality is uncertainty and instability. So, hardiness plays a significant role not only in a personal but also in a professional context. This is supported by Reupert's (2020) opinion about changes and the need for adaptation to the new norms in the context of the COVID-2019 pandemic, which was called unprecedented, extraordinary and unique.

The views of Tu et al. (2020) on the unlikelihood of the COVID-19 pandemic as the last health crisis are relevant in the context of the current reality, as there have been 7 such crises in the world over the past 20 years.

In this context, Meltem and Karakurt (2020) conclude on the need to introduce hardiness education programs for undergraduate students in the context of the COVID-19 pandemic.

Our conclusions that the vast majority of studies on hardiness building are currently focused primarily on psychology students and related (psychological) majors correlate with the results of the study by Matuš

(2020). According to it, the hardiness of future teachers is significantly lower than the hardiness of future psychologists.

The results complement the findings of other researchers on the role of hardiness for teachers in the context of preventing their professional burnout (Azeem, 2010; Chan, 2003); emotional control (Kokun, 2021; Azarian et al., 2016); stress resistance (Opeyemi, 2016; McCalister et al., 2006); impact on job satisfaction (Jarvis, 1993), etc.

It was established that not only the emotional component, which is primarily realized through hardiness training or the development of coping strategies. The content of training on safety in the social and professional environment also plays an important role in building students' hardiness. This is consistent with the views of Karpova and Gvozdi (2019) on the role of the content of security subjects in the training of future specialists.

The theoretical significance of the study is substantiated correlation between the main provisions of life safety and labor protection and of hardiness.

The practical significance of the study is proved statistically significant positive impact of studying the Life Safety with the Basics of Labor Protection course on the development of future teachers' hardiness.

The originality of the study. The authors of this research are the first to identify the connection between the study of the Life Safety with the Basics of Labor Protection course and the development of future teachers' hardiness highlighted. We assume that the study of other safety subjects also has a positive effect on the hardiness of future professionals, in particular, of other majors.

As the development of hardiness of future teachers is not one of the goals of studying the Life Safety with the Basics of Labor Protection course, as evidenced by the analysis of relevant educational programs, we consider the obtained results significant.

6. Limitations

Despite the statistical significance of the results, we are convinced of the need for a larger-scale test of how the study of Life Safety with the Basics of Labor Protection course affects the development of future teacher's hardiness. We associate this need, first, with the novelty of the obtained results and with the impossibility of comparison with similar results. Second, this is associated with the fact that the Life Safety with the Basics of Labor Protection course for pedagogical majors has been taught relatively recently, and therefore is still insufficiently developed. The result of its study by students largely depends on the teacher's professional competence. Third, the study was conducted in wartime, when the problem of security is of paramount importance. So, students could have a higher motivation to study security subject than in peacetime.

7. Conclusions

The results of the study confirm the validity of the advanced hypothesis and give grounds to assert the following.

Human hardiness is a complex and multifaceted phenomenon that determines the quality of life and plays a key role in difficult or critical conditions.

The basic provisions of life safety, occupational safety and hardiness are conceptually correlated, but their methodological implementation in the training of future specialists is different. The implementation of the

basic provisions of life safety and labor protection, in particular, when teaching Life Safety with the Basics of Labor Protection is fundamental under a knowledge-based approach. It implies that a person cannot adapt to difficult conditions and preserve life, health and performance if he or she does not know how to act correctly. And the psychological approach prevails in building personality hardiness: a person must be psychologically ready for difficult conditions.

It was experimentally proved that studying the Life Safety with the Basics of Labor Protection course has a positive effect on the hardiness of students of pedagogical majors (future preschool teachers, primary school teachers, middle and high school teachers) and this effect is statistically significant.

The obtained results can be the ground for improving the professional training of future teachers – specialists responsible not only for personal but also for collective safety during the educational process. This is relevant both for Ukraine in the context of the Russian invasion, and for the entire democratic world in the context of the existence of totalitarian regimes on the planet, which is a source of potential global dangers.

Prospects for further research are related to testing the impact of studying security subjects on the hardiness of students of other educational institutions and students of other majors in peacetime, not wartime.

Conflict of interest

The authors declare that there is no conflict of interest.

8. Bibliographic references

- Azarian, A., Farokhzadian, A. A., & Habibi, E. (2016). Relationship between psychological hardiness and emotional control index: a communicative approach. *International Journal of Medical Research & Health Sciences*, 5(5), 216-221.
- Azeem, S. M. (2010). Personality hardiness, job involvement and job burnout among teachers. *International Journal of Vocational and Technical Education*, 2(3), 36-40.
- Bartone, P. T., & Hystad, S. W. (2010). Increasing mental hardiness for stress hardiness in operational settings. In P. T. Bartone, B. H. Johnsen, J. Eid, J. M. Violanti, & J. C. Laberg (Eds.), *Enhancing human performance in security operations: International and law enforcement perspective* (pp. 257-272). Springfield.
- Beck, U. (2006). Living in the world risk society. *Economy and Society*, 35(3), 329-345. <https://doi.org/10.1080/03085140600844902>
- Bereziak, K., Diachenko, I., Hlinchuk, Yu., Kalinina, T., & Tereshchenko, O. (2022). The Influence of Hardiness on the Effectiveness of Students' Adaptation During the Hostilities. *Journal for Educators, Teachers and Trainers*, 13(5), 272-282. <https://doi.org/10.47750/jett.2022.13.05.025>
- Chaliuk, Yu. (2022). Global socio-economic development in VUCA, SPOD, DEST and BANI world. *Economy and society*, (36). <https://doi.org/10.32782/2524-0072/2022-36-21>
- Chan, D. W. (2003). Hardiness and its role in the stress-burnout relationship among prospective Chinese teachers in Hong Kong. *Teaching and Teacher Education*, 19(4), 381-395. [https://doi.org/10.1016/S0742-051X\(03\)00023-4](https://doi.org/10.1016/S0742-051X(03)00023-4)
- Chykhantsova, O. (2018). Features of Demonstration of Hardiness' Components of Personality. *Science and Education a New Dimension. Pedagogy and Psychology*, 6(155), 58-60.
- Chykhantsova, O. (2021). Quality of life and life satisfaction of the individual. *The driving force of science and trends in its development: Collection of scientific papers «SCIENTIA»*, 5, 13-15. Coventry, United Kingdom.

- Haghighatgoo, M., & Besharat, M. A. (2011). The relationship between hardiness and time perspective in students. *Procedia – Social and Behavioral Sciences*, 30, 925-928. <http://dx.doi.org/10.1016/j.sbspro.2011.10.179>
- Jarvis, B. A. (1993). *A study of the relationship between teacher hardiness and job satisfaction at selected elementary schools*. (Doctoral dissertation), University of Central Florida.
- Karpova, E., & Gvozdi, S. (2019). Features of interrelation of culture of safe living activity components at future sociological specialties specialists. *Scientific Bulletin of V. O. Sukhomlynskyi MNU. Pedagogical sciences*, 2(65), 127-134. http://dspace.pdpu.edu.ua/bitstream/123456789/9711/1/Nvmdup_2019_2_25.pdf
- Khosravi, A., & Namani, E. (2022). Investigating the Structural Model of the Relationship Between Self-Compassion and Psychological Hardiness with Family Cohesion in Women with War-Affected Spouses: The Mediating Role of Self-Worth. *Contemporary Family Therapy*, 44(3), 276-283. <https://doi.org/10.1007/s10591-021-09579-5>
- Kobasa, S. C. (1979). Stressful life events, personality, and health – Inquiry into hardiness. *Journal of Personality and Social Psychology*, 37(1), 1-11. <https://doi.org/10.1037/0022-3514.37.1>
- Kobasa, S. C., Maddi, S. R., & Kahn, S. (1982). Hardiness and health: A prospective study of Personality and Social Psychology. *Journal of personality and social psychology*, 42(1), 168-177.
- Kokun, O. (2021). Testing in mental health research: professional hardiness questionnaire (english-language version). *Medical News*, 74(11), 2799-2805. <https://doi.org/10.36740/wlek202111121>
- Kuzikova, S., Shcherbak, T., Blynova, O., Pobokina, G., Dyatchenko, D., Mariichyn, A., & Popovych, I. (2021). Empirical Research of the Hardiness of the Personality in Critical Conditions of Life. *Postmodern Openings*, 12(2), 57-77. <https://doi.org/10.18662/po/12.2/297>
- Leontiev, A., & Raskazov, I. (2019). S. Muddi viability test. Ni.biz.ua. http://ni.biz.ua/1/1_5/1_51709_test-zhiznestoykosti-s-maddi.html
- Maddi, S. R. (2006). Hardiness: The Courage to Grow from Stresses. *The Journal of Positive Psychology*, 1(3), 160-168. <http://dx.doi.org/10.1080/17439760600619609>
- Maddi, S., & Khoshaba, D. (1994). Hardiness and Mental Health. *Journal of Personality Assessment*, 63(2), 265-274. http://dx.doi.org/10.1207/s15327752jpa6302_6
- Matuš, R. (2020). Hardiness in students of helping professions. *Lifelong Education: The 21 Century*, 4(32). https://il21.petrus.ru/journal/article_en.php?id=6350
- McCalister, K. T., Dolbier, C. L., Webster, J. A., Mallon, M. W., & Steinhardt, M. A. (2006). Hardiness and support at work as predictors of work stress and job satisfaction. *American Journal of Health Promotion*, 20(3), 183-191. <https://doi.org/10.4278/0890-1171-20.3.183>
- Meshko, H. M., & Meshko, O. I. (2018). Influence of pedagogical activity on the state of professional health of teachers. *European Vector of Contemporary Psychology, Pedagogy and Social Sciences: The Experience of Ukraine and the Republic of Poland: collective monograph*, Vol. 1, pp. 282-300. Sandomierz, Izdevnieciba "Baltija Publishing".
- Miroshnikova, A. (2022). What is making us stronger? *Osvitoria Media*. <https://osvitoria.media/experience/yak-rozvynuty-zhyttyestijkist/>
- Opeyemi, S. M. I. (2016). Hardiness, sensation seeking, optimism and social support as predictors of stress tolerance among private secondary schools teachers in Lagos state. *Clinical Depression*, 2(3), 366-382. <https://doi.org/10.4172/2572-0791.1000116>
- Oral, M., & Karakurt, N. (2022). The impact of psychological hardiness on intolerance of uncertainty in university students during the COVID-19 pandemic. *Journal of Community Psychology*, 50(8), 3574-3589.
- Predko, V. (2022). The development of hardiness as a leading mechanism for the internal recovery of participants in the educational process during the war period. *Transformational processes in the war and post-war period*. Proceedings of the All-Ukrainian Interdisciplinary Scientific and Practical Conference, 251-253. Chernihiv, Ukraine. https://reicst.com.ua/asp/issue/view/conf_mult_06_2022

- Reupert, A. (2020). Change and (the need for) adaptability: the new normal. *Advances in Mental Health*, 18(2), 91-93. <https://doi.org/10.1080/18387357.2020.1792633>
- Scheuch, K., Haufe, E., & Seibt, R. (2015). Teachers' Health. *German Medical Journal International*, 112(20), 347-356. <https://doi.org/10.3238/arztebl.2015.0347>
- Soderstrom, M., Dolbier, C., Leiferman, J., & Steinhardt, M. (2000). The relationship of hardiness, coping strategies, and perceived stress to symptoms of illness. *Journal of Behavioral Medicine*, 23, 311-328. <https://doi.org/10.1023/A:1005514310142>
- Tu, H., Tu, S., Gao, S., Shao, A., & Shen, J. (2020). Current epidemiological and clinical features of COVID-19; a global perspective from China. *Journal of Infection*, 81(1), 1-9. <https://doi.org/10.1016/j.jinf.2020.04.011>
- Tytarenko, T., & Larina, T. (2009). *Vitality of the individual: social necessity and security*. Kyiv: Marych. (In Ukrainian)
- Zerkalov, D. (2011). *Life safety: educational guide*. Kyiv: Osnova.