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DEVELOPMENT, IMPLEMENTATION,
AND EVALUATION OF THE TRAINING
COURSE FOR SCHOOLTEACHERS
«FIRST ON THE SCENE» AT UKRAINIAN
MEDICAL UNIVERSITIES
(THE EU CO-FUNDED ERASMUS+
PROJECT SIMS ‘SIMULATION MEDICINE
AND SCENARIO-BASED LEARNING
FOR EMERGENCY CARE’)

Summary

The EU co-funded Erasmus+ project SimS (Simulation Medicine and Scenario-Based Learning for Emergency Care) aims to improve first aid and emergency care training in Ukraine. As part of this initiative, a certified training course for schoolteachers titled «First on the Scene: First Aid and Psychological Support in Emergencies», has been developed and implemented across three Ukrainian medical universities. This paper describes the pedagogical approach adopted for the course and presents the results of its assessment and evaluation.

The course was designed by educators from Ukrainian partner universities following a train-the-trainer programme led by European experts. The pedagogical approach centred on scenario-based learning (SBL), integrating virtual cases with hands-on simulation training. This methodology was designed to promote experiential learning, critical thinking and the practical application of first aid and psychological support skills.

A total of 160 schoolteachers completed the course. Its effectiveness was evaluated using pre- and post-training tests, as well as an evaluation survey which assessed perceived skill improvement, confidence and satisfaction with the course. The majority of teachers demonstrated significant knowledge improvement and reported feeling more competent and confident in their ability to provide first aid and psychological support. They also expressed high satisfaction with the course and its relevance to their professional roles.

The ‘First on the Scene’ training course successfully prepared teachers to respond to emergencies in schools. The findings support the use of scenario-based and simulation training to build emergency response capacity among non-medical professionals, highlighting the importance of equipping schoolteachers with these vital skills.

Keywords: Erasmus+ SimS Project; Scenario-Based Learning; Simulation; First Aid; Psychological Support; Simulation-Based Training.

Introduction

The EU co-funded Erasmus+ KA2 CBHE project SimS (Simulation medicine and Scenario-based learning for emergency care, 101082077-SimS-ERASMUS-EDU-2022-CBHE, 01.01.2023-31.12.2025) aims to improve the quality of first aid (including psychological) and emergency care training and delivery in Ukraine. The SimS project consortium brings together five Ukrainian HEIs: Bukovinian State Medical University (BSMU, the project coordinator), Dnipro State University of Internal Affairs (DSUIA), Kharkiv National Medical University (KhNMU), National Academy of Internal Affairs (NAIA), Odesa National Medical University (ONMedU), and four European partners: Aristotle University of Thessaloniki (AUTH, Greece), Lithuanian University of Health Sciences (LUHS, Lithuania), University of Santiago de Compostela (USC, Spain), Spanish Society of Primary Care Physicians SEMERGEN (FS, Spain), and National Agency for Higher

Education Quality Assurance (NAQA, Ukraine). The beneficiaries of the project are the Ministry of Education and Science of Ukraine, the Ministry of Health of Ukraine, and the Ministry of Internal Affairs of Ukraine.

The SimS project aims to deliver innovative scenario-based simulation training courses to three project target groups: undergraduate medical students, police cadets/officers, and school teachers. These courses are designed to provide participants with the knowledge and skills necessary to deliver first aid (including psychological support) and emergency care at the scene of an accident (the pre-hospital phase) and during the initial stage of hospital emergency care.

As part of the SimS project, experts from the European partner universities (AUTH, LUHS, USC and FS) conducted a series of train-the-trainer courses for Ukrainian teachers and trainers in 2023. The courses covered scenario-based learning, creating virtual patients on the

OpenLabyrinth platform, simulation-based emergency care training, and the psychological approach to disasters. The courses aimed to equip participants with the skills to design and implement clinical scenarios and simulation technologies in training courses. This would increase the competence of teachers and simulation trainers from Ukrainian partner universities, thereby ensuring the project's successful development.

The new 'First on the Scene' emergency care training courses were created in collaboration by trained teachers from Ukrainian partner universities (BSMU, DSUIA, KhNMU, NAIA and ONMedU) in 2024. These courses have since been incorporated into the curricula of all Ukrainian partner universities and introduced during the 2024-25 academic year. A total of 160 police cadets, 50 police officers, 160 schoolteachers, and 170 medical students have successfully completed the training courses.

This paper describes the pedagogical approach and methodology used to develop and implement the training course for schoolteachers, «First on the Scene: First Aid and Psychological Support in Emergencies», and presents the results of the course assessment and evaluation.

Development and implementation of the training course.

First aid refers to the immediate care provided to individuals in urgent or emergency situations resulting from trauma or illness, with the aim of preserving life, alleviating suffering and preventing further injury or illness until medical assistance becomes available [8, 17]. These interventions not only address physical injuries, but also provide essential initial social and psychological care following a traumatic event [4]. Psychological First Aid (PFA) is an evidence-based approach designed to address the immediate emotional and psychological needs of individuals affected by emergencies [2]. It can be adapted to various settings and cultural and social contexts, and has been used to address the acute emotional needs of children and adults in areas affected by war, displacement and the aftermath of disasters, as well as during large-scale emergencies [6, 7].

Due to the multifaceted nature of first aid, particularly its psychosocial dimension, it is crucial that schoolteachers, who often act as first responders in school emergencies, undergo training in first aid and PFA. This training aims to equip teachers with the skills needed to manage high-risk situations effectively and provide physical and emotional support to those affected [16].

Methodology.

Scenario-based learning (SBL) is recognised as an effective training methodology for improving preparedness and promoting the practical application of first aid and emergency care knowledge and skills among different groups of learners, including first responders and non-medical professionals [1, 3, 10, 11, 13]. SBL can be incorporated into first aid training programmes in various ways [15]. In traditional face-to-face training, it is typically delivered through in-person simulations, role-playing exercises or interactive group activities. Scenario-based simulations provide an opportunity for experiential learning, encouraging active decision-making

and enhancing critical thinking and communication skills. Simulation allows for practice and assessment of competence in a risk-free environment, which is beneficial for developing skills and confidence [5].

Alternatively, SBL can be delivered via digital platforms or tools in the form of interactive, story-based virtual scenarios. These virtual scenarios, also known as virtual patients or virtual cases, provide an adaptive learning environment that bridges the gap between theory and practice, thereby enhancing the learning experience. They are often used alongside simulation training to help trainees apply their theoretical knowledge and prepare for real-world practice more effectively [9, 12, 14].

In the 'First on the Scene' first aid training programme virtual cases are used for both self-directed learning and team-based learning. They help to standardise content delivery and prepare learners for live exercises (simulations). Virtual patients on the OpenLabyrinth platform (<https://demo.openlabyrinth.ca/>) promote iterative and reflective learning by enabling students to apply their knowledge and receive feedback on their decisions. Immediate feedback and assessment help trainees to evaluate their performance and identify areas for improvement, which is critical to reinforcing learning and ensuring skill acquisition.

The SimS training courses use a scenario-based active learning strategy that incorporates realistic clinical scenarios in the form of virtual cases and simulations. This provides trainees with a structured yet flexible training framework that enables them to rehearse real-life situations, make decisions under pressure, and reflect on their responses in a safe and controlled setting.

Quality criteria.

The SimS consortium has decided upon the following quality criteria for the development and delivery of the training courses:

- The courses are designed to enhance the first aid and emergency care skills of «first on the scene» responders, equipping them to handle the most common emergencies and accidents. They are developed in accordance with the relevant national and/or European emergency care and psychological first aid regulations, recommendations, and standards.
- The methodology is based on scenario-based learning (SBL) and simulation technologies, and teaching and learning activities and assessments are constructively aligned with the intended learning outcomes.
- The 'First on the Scene' emergency care training course for each project target group comprises a minimum of ten virtual cases, which are available on the OpenLabyrinth platform in Ukrainian and English alongside relevant simulation scenarios.
- Assessment methods include both formative and summative assessments to analyse participants' achievements and measure the effectiveness of the courses.
- Evaluation surveys are designed to analyse the course's effectiveness, identify areas for improvement, and assess the overall learning experience.
- The 'First on the Scene' emergency care training courses have been incorporated into the curricula of the

Ukrainian partner universities and are available on their LMS.

- A minimum of 50 participants at each university have completed the 'First on the Scene' emergency care training programme, including the pre-test, post-test and course evaluation survey.

Collaborative course design.

After completing the train-the-trainer courses, educators from BSMU, KhNMU and ONMedU jointly developed a scenario-based simulation training course for schoolteachers, focusing on first response scenarios. Collectively, they designed the thematic plan, structure and content of the 1 ECTS credit training course, creating virtual cases, simulation scenarios and learning and assessment materials.

The training course has been developed in accordance with the regulations and standards established by the Law of Ukraine «On Emergency Medical Care» (5 July 2012, No. 5081-VI), the Resolution of the Cabinet of Ministers of Ukraine «On approval of the procedure for basic and advanced training of persons obligated to provide first aid» (21 November 2012, No. 1115), The Regulation of the Ministry of Health of Ukraine «On improving first aid training for non-medical personnel» (4 August 2021, No. 1627); the Regulation of the Ministry of Health of Ukraine «On approving procedures for providing pre-medical care to persons in emergencies» (9 March 2022, No. 441); and the Regulation of the Ministry of Health of Ukraine «Selected aspects of the professional development of pedagogical staff in educational institutions» (26 January 2022, No. 64; the standard training programme for school teachers, principals, and psychologists, «Training of teaching staff in first aid and road safety»; the European Resuscitation Council (ERC) guidelines; the WHO emergency preparedness competency model; and the psychological first aid (PFA) guides and recommendations.

«First on the Scene» training course.

The 'First on the Scene: First Aid and Psychological Support in Emergencies' training course for schoolteachers was developed and implemented jointly during the 2024-25 academic year.

The course aims to provide schoolteachers with the essential knowledge, practical skills and psychological strategies needed to recognise, manage and respond effectively to medical emergencies and critical incidents involving children and adults in school settings, particularly in situations involving multiple casualties or high stress.

The learning objectives of the course.

By the end of the course trainees should be able to:

- identify the medical, legal and ethical principles that govern the provision of first aid by school teachers in Ukraine;
- recognise the signs and causes of common medical emergencies in school environments, including cardiac arrest (adult and pediatric), airway obstruction, convulsions and anaphylaxis;
- describe appropriate first aid procedures for trauma, external bleeding, acute poisoning, hypoglycemia, syncope, burns and electrical injuries;
- explain the physiological differences in managing paediatric versus adult medical emergencies;

- describe the steps of Basic Life Support (BLS) for children and adults, including how and when to initiate cardiopulmonary resuscitation (CPR) and use an automated external defibrillator (AED);
- demonstrate the correct first aid techniques for managing choking, controlling bleeding, performing CPR and stabilising injuries in both adults and children;
- respond correctly to cases of anaphylactic shock, hypoglycemia and seizures using school-appropriate resources;
- identify the principles of psychological first aid (PFA) and effective communication techniques for supporting victims, especially children, during and after emergencies and critical incidents;
- provide immediate emotional support and reassurance to affected schoolchildren and colleagues in the event of a stressful or traumatic incident;
- apply scene safety principles and organise the evacuation of children in the event of a mass casualty incident at school;
- assess emergency scenarios in the school setting and prioritise appropriate responses while maintaining control and clear communication;
- reflect on their own readiness and develop a personal emergency response plan that aligns with school safety policies and national protocols.

The course content (thematic plan)

1. First aid for adult cardiac arrest
2. First aid for pediatric cardiac arrest
3. First aid for airway obstruction (choking)
4. First aid for trauma and massive external bleeding
5. First aid for convulsive syndrome
6. First aid for acute poisoning
7. First aid for burn and electrical injury
8. First aid for syncope
9. First aid for hypoglycemia
10. First aid for anaphylaxis
11. Emergency preparedness and coordination during a threat/incident involving mass casualties
12. Psychological first aid (PFA) and effective communication in emergencies. Psychological self-help

The course assessment.

Both formative and summative assessment methods are employed to analyse participants' achievements and evaluate the effectiveness of the course.

- Skills checklists are used during hands-on practice to provide a step-by-step, standardised assessment of procedural tasks and adherence to protocols or guidelines.
- Direct observation and debriefing during role-play or simulation exercises evaluate decision-making, procedural accuracy, situational awareness, teamwork, and communication under pressure.
- Ongoing peer and instructor feedback is used during or after simulations to promote reflective learning.
- Pre- and post-tests measure baseline and acquired knowledge of first aid protocols and psychological support principles and provide an objective evaluation of the training course's impact and effectiveness.

The certified training course for schoolteachers, «First on the Scene: First Aid and Psychological Support in

Emergencies», was delivered by three partner medical universities (BSMU, KhNMU and ONMedU) in the form of three to five training sessions during the 2024-25 academic year. Participants' achievements were systematically assessed and analysed, and both trainees and trainers evaluated the courses via structured surveys.

Assessment and evaluation of the training course.

Assessment of the training course.

During the 2024-25 academic year, a total of 160 schoolteachers successfully completed the «First on the Scene: First Aid and Psychological Support in Emergencies» training course. To evaluate the effectiveness of the program, participants were asked to complete a pre-test and post-test, each consisting of

30 multiple-choice questions designed to assess their knowledge of first aid protocols and psychological support principles.

Analysis of the results of the pre- and post-training assessments reveals the strong, positive impact of the 'First on the Scene' training course. Participants demonstrated improved knowledge, with an average score increase of 27.2 percentage points (see Fig. 1). This substantial increase highlights the course's effectiveness in developing vital emergency care competencies, such as delivering first aid and providing psychological support. The results suggest that the training enhanced teachers' factual understanding, preparedness, and confidence in responding appropriately to critical incidents in a school setting.

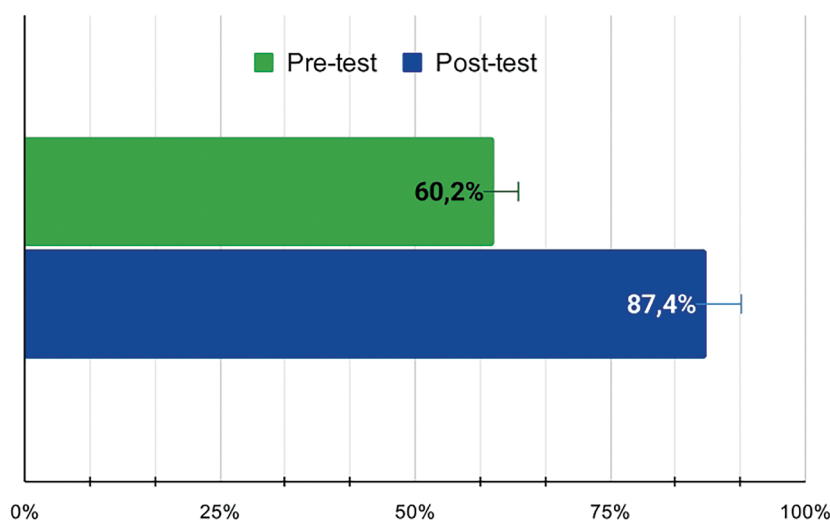


Fig. 1. Pre-test and post-test results, %

These findings affirm that the SBL methodology, which combines virtual scenarios and simulation training when aligned with clear learning objectives and supported by formative assessment, is an effective means of building emergency response capacity among non-medical professionals in educational settings.

Beyond overall score gains, the assessment data were used to evaluate instructional quality in terms of content relevance, delivery methods, and pedagogical approach; identify learning gaps through question-level analysis; provide personalized feedback to participants; encourage self-reflection on strengths and areas for growth; and inform future course iterations, allowing for targeted refinements in training and assessment design.

Evaluation of the training course.

The next section summarises the results of the evaluation survey completed by schoolteachers who undertook the «First on the Scene: First Aid and Psychological Support in Emergencies» training course during the 2024-25 academic year. The survey comprised 25 open and closed questions to gather qualitative and quantitative data about course content, teaching methods, quality of instruction, self-assessment of knowledge and skills acquired, and the learning environment.

The evaluation survey was designed to analyse the effectiveness of the training course, identify areas for improvement and assess the overall learning experience. It provides insights into the relevance, quality and practicality of the course content, structure and delivery from the

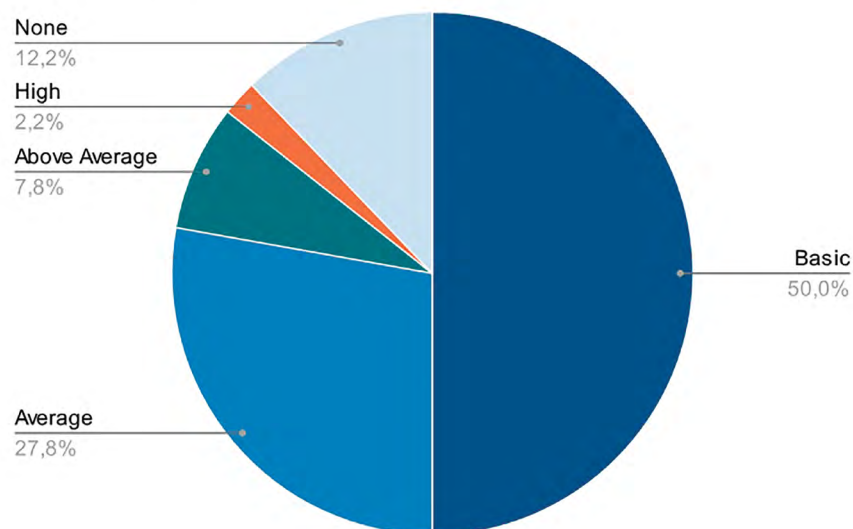
participants' perspective. Course trainers and instructors used these findings to assess how well the course achieved its learning objectives and supported learning. By analysing the feedback, we were able to evaluate the overall learning experience and identify areas for enhancement. These findings are then used to refine the course materials, teaching strategies, and assessment methods for future iterations of the course.

To evaluate perceived improvements in the trainees' knowledge and skills in providing first aid and psychological support in emergencies, they were asked to self-rate their level of expertise before and after completing the course. The results are shown in Figures 2A and 2B.

Before attending the training course, half of the schoolteachers rated their knowledge and skills in emergency situations as basic, while over 12% reported having no prior knowledge. This indicates that the majority entered the course with limited competence, highlighting the necessity and relevance of the training. There was a significant enhancement in the self-perceived knowledge and abilities of schoolteachers following completion of the training. Over 75% rated themselves as above average or high, demonstrating the training's clear impact on boosting confidence and competence.

To evaluate the relevance and quality of the course content and instructional methods, participants were asked to rate the effectiveness of simulation training and virtual scenarios in facilitating knowledge acquisition and the development of practical skills (see Fig. 3).

The level of knowledge and skills before the course (A)



The level of knowledge and skills after completing the course (B)

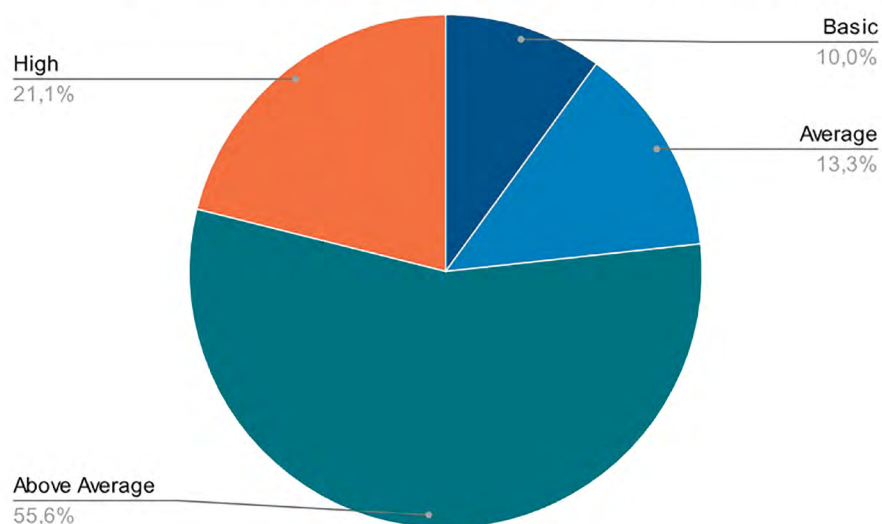


Fig. 2. The level of knowledge and skills before (A) and after completing the course (B), %

The effectiveness of the simulation training and virtual scenarios

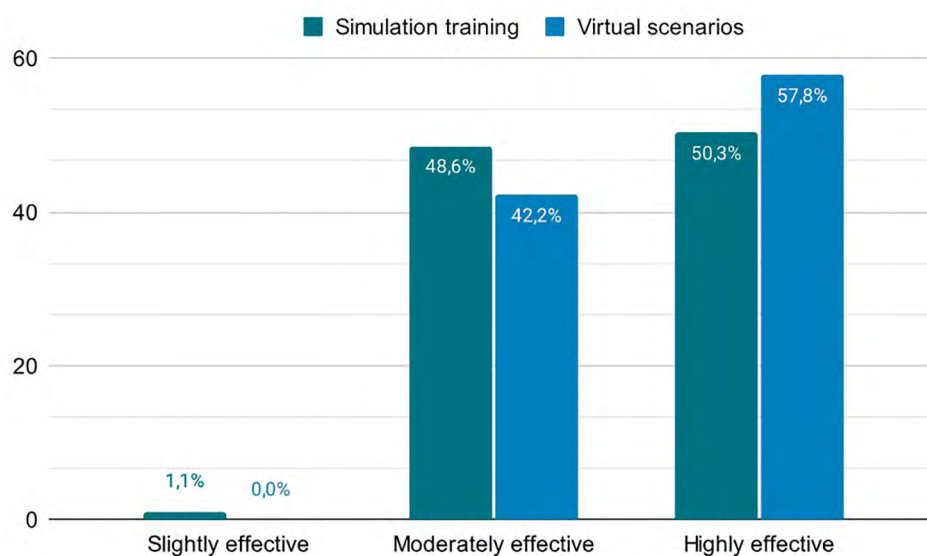


Fig. 3. The effectiveness of the simulation training and virtual scenarios, %

The findings clearly demonstrate the effectiveness of the scenario-based learning approach in emergency care training. Both simulation and virtual scenarios were rated as moderately to highly effective, and learners strongly preferred them for their ability to enhance practical skills, realism and engagement.

Participants were asked to rate their confidence in providing first aid and psychological support in emergencies after completing the course (see Fig. 4).

Following completion of the course, over 80% of participants reported feeling at least moderately confident in their ability to provide first aid. This suggests that the training effectively increased schoolteachers' perceived readiness to respond to emergencies. Furthermore, 50% of participants felt quite confident in providing psychological first aid in an emergency, which demonstrates the significant impact of the course on developing these skills.

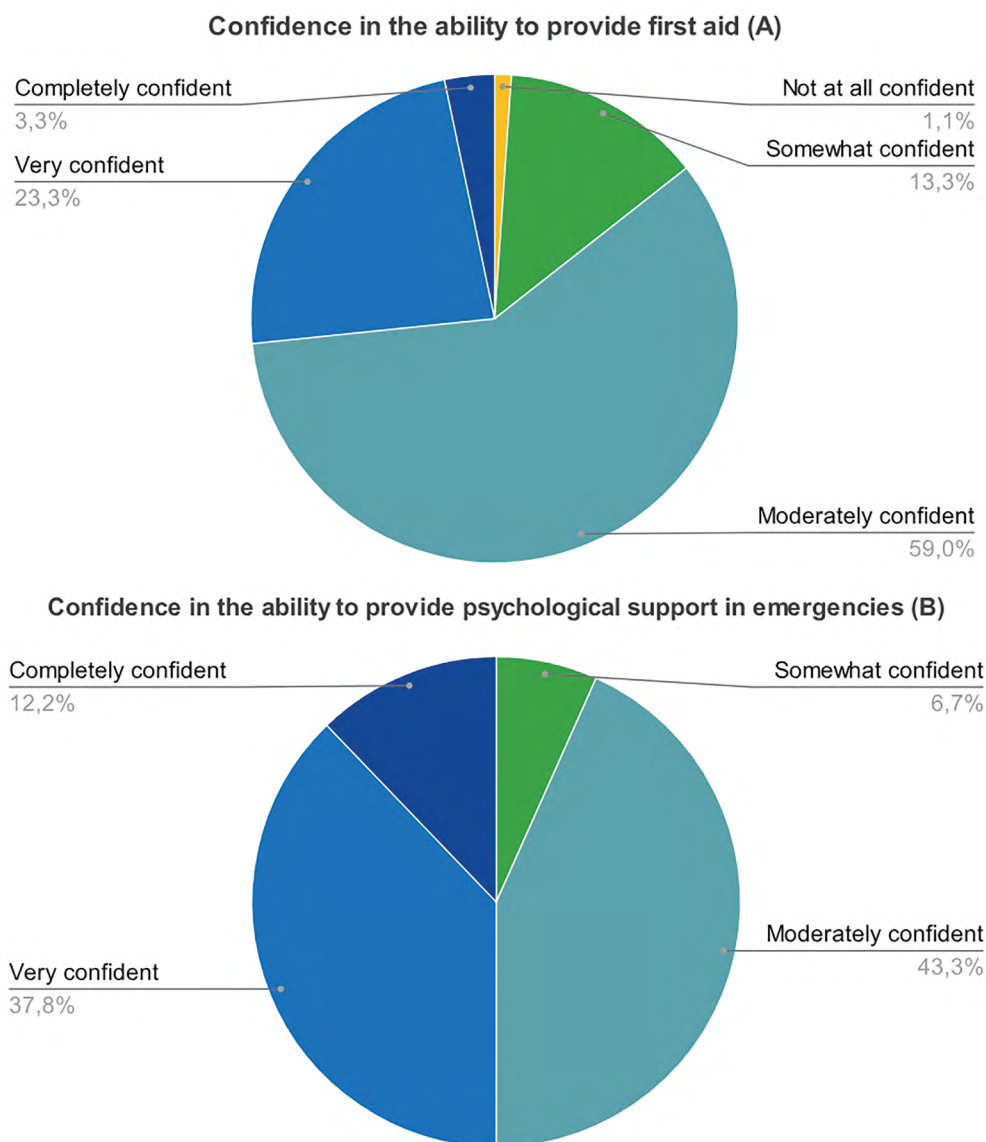


Fig. 4. Confidence in the ability to provide first aid (A) and psychological support in emergencies (B), %

To estimate satisfaction with the learning outcomes of the course, we asked participants to indicate their level of agreement with the following statements: The training course met its stated goals and objectives; the course met or exceeded my expectations; the course was relevant and useful for my future work; the course improved my professional competence and confidence; and the learning environment was comfortable and safe (see Fig. 5).

Participants overwhelmingly agreed that the course had met its stated goals, matching or exceeding their expectations. Over 90% expressed strong satisfaction with the intended outcomes. Furthermore, almost all

respondents affirmed the course's relevance to their work, reporting increased professional confidence and competence as a result. Finally, the training succeeded in fostering a supportive and psychologically safe learning environment.

Finally, we asked participants to indicate their overall satisfaction with the course (see Fig. 6).

The high overall satisfaction rating among schoolteachers with the 'First on the Scene: First Aid and Psychological Support in Emergencies' training course highlights its success in meeting their expectations and providing high-quality, useful training.

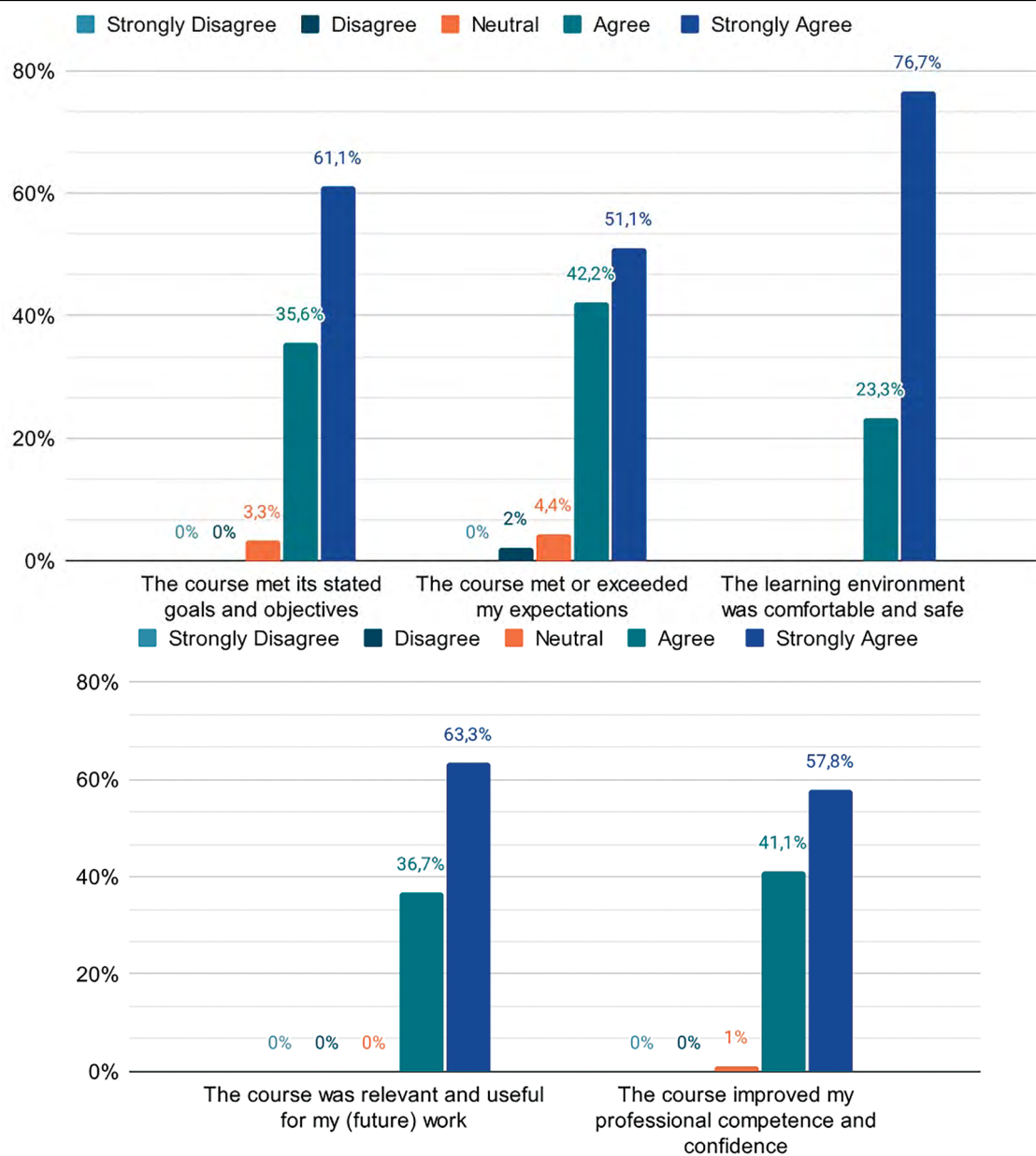


Fig. 5. Satisfaction with the course learning outcomes, %

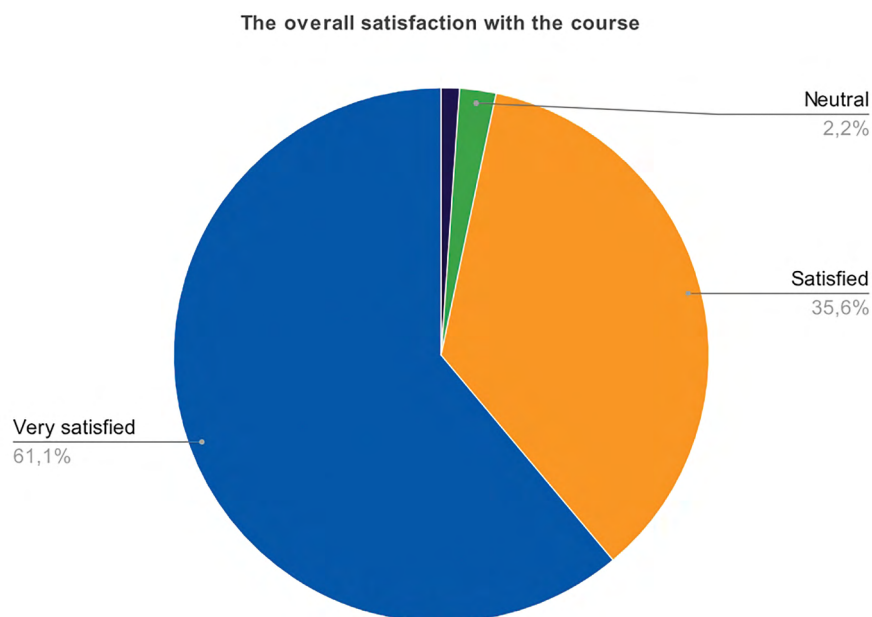


Fig. 6. The overall course feedback, %

In summary, quantitative assessments revealed substantial improvements in emergency care knowledge, with schoolteachers achieving a 27-percentage-point increase in scores from pre- to post-training. These results were reflected in the self-assessments, with over 75% of participants rating their competence as above average or high after the course. Confidence in delivering first aid and psychological support increased significantly, with 80% feeling prepared to act in emergencies. Satisfaction levels were exceptionally high, with over 90% of learners affirming that the course met or exceeded their expectations, was professionally relevant and enhanced their capabilities. Participants consistently described the learning environment as supportive and psychologically safe, which highlights the strength of the course's pedagogical approach.

Conclusion

The «First on the Scene: First Aid and Psychological Support in Emergencies» training course, developed under the EU co-funded SimS project (Simulation medicine and Scenario-based learning for emergency care, 101082077-SimS-ERASMUS-EDU-2022-CBHE, 01.01.2023-31.12.2025), has demonstrated strong pedagogical and practical impact in preparing Ukrainian

schoolteachers to respond effectively to medical and psychological emergencies in school settings.

By integrating scenario-based learning through simulations and virtual cases, the course offered a structured yet flexible framework for experiential learning, promoting the acquisition of knowledge and skills. Quantitative assessments revealed a significant increase in participants' knowledge, and self-assessments confirmed enhanced confidence and competence in delivering both first aid and psychological support. Evaluation surveys further validated the course's relevance, instructional quality and learner-centred design. Over 90% of participants expressed high satisfaction and affirmed the applicability of the training outcomes to their professional roles.

The course's alignment with Ukrainian and European emergency care standards, combined with its focus on psychological safety and reflective practice, highlights its potential as a scalable model for non-medical emergency preparedness. These findings support the continued integration of SBL methodologies in emergency training and highlight the importance of equipping schoolteachers with the tools to act decisively and compassionately during critical incidents. Future iterations will benefit from ongoing feedback and refinement to sustain impact and ensure long-term resilience in school communities.

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**РОЗРОБКА, ІМПЛЕМЕНТАЦІЯ ТА ОЦІНЮВАННЯ ТРЕНІНГОВОГО КУРСУ ДЛЯ ШКІЛЬНИХ ВЧИТЕЛІВ
«ПЕРШИЙ НА МІСЦІ ПОДІЇ» В УКРАЇНСЬКИХ МЕДИЧНИХ УНІВЕРСИТЕТАХ (СПІВФІНАНСОВАНИЙ
ЄС ПРОЕКТ ERASMUS+ SIMS «СИМУЛЯЦІЙНА МЕДИЦИНА ТА СЦЕНАРІЙ-ОРІЄНТОВАНЕ НАВЧАННЯ
З НЕВІДКЛАДНОЇ ДОПОМОГИ»**

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Резюме.

Європейський Союз у межах проєкту Erasmus+ SimS (*Simulation medicine and Scenario-based learning for emergency care*) співфінансує ініціативу, спрямовану на вдосконалення підготовки з надання першої допомоги та екстреної медичної допомоги в Україні. У рамках цього проєкту було розроблено та впроваджено сертифікований навчальний курс для вчителів шкіл під назвою «Перший на місці події: перша допомога та психологічна підтримка в надзвичайних ситуаціях», який реалізується у трьох українських медичних університетах. У статті описано педагогічний підхід, застосований під час проведення курсу, а також наведено результати його оцінювання та аналізу.

Проєкт SimS (Симуляційна медицина та сценарій-орієнтоване навчання з невідкладної допомоги), співфінансований Європейським Союзом у рамках програми Erasmus+, має на меті вдосконалення навчання з надання першої та екстреної медичної допомоги в Україні. У межах цієї ініціативи було розроблено та впроваджено сертифікований тренінговий курс для вчителів закладів загальної середньої освіти під назвою «Перший на місці події: перша допомога та психологічна підтримка в надзвичайних ситуаціях», який реалізовано в трьох українських медичних університетах. У статті описано педагогічний підхід та представлено результати оцінювання ефективності курсу.

Тренінговий курс було спільно розроблено викладачами українських університетів-партнерів після проходження програми підготовки тренерів, організованої європейськими експертами. Педагогічний підхід ґрунтувався на методології сценарій-орієнтованого навчання з інтеграцією віртуальних кейсів та практичних симуляційних занять. Такий підхід спрямований на розвиток дослідницького навчання, критичного мислення та практичного застосування навичок надання першої допомоги і психологічної підтримки.

Загалом курс успішно завершили 160 учителів. Ефективність навчання оцінювали за допомогою тестування до і після проходження курсу, а також анкетування, яке охоплювало самооцінювання набутих навичок, рівня впевненості та задоволеності навчанням. Результати засвідчили суттєве зростання рівня знань, а також підвищення компетентності та впевненості учасників у своїй здатності надавати першу допомогу й психологічну підтримку. Учасники високо оцінили курс та його актуальність для професійної діяльності.

Тренінговий курс «Перший на місці події» ефективно підготував учителів до дій у надзвичайних ситуаціях у закладах освіти. Отримані результати підтверджують ефективність сценарного і симуляційного навчання для формування готовності до реагування на надзвичайні ситуації серед немедичних фахівців, підкреслюючи важливість забезпечення педагогів цими життєво необхідними знаннями і вміннями.

Ключові слова: проєкт Erasmus+ SimS; сценарій-орієнтоване навчання; симуляція; перша допомога; психологічна підтримка; симуляційне навчання.

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