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ASSESSMENT OF THE READINESS OF MEDICAL STUDENTS TO PROVIDE FIRST AID IN EMERGENCY SITUATIONS

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Abstract

This study aims to assess the level of knowledge and practical preparation of students of higher medical institutions in providing first aid in emergency situations (fire, gas leak, fainting, etc.). During the study, an online survey was conducted via the Google Form platform. The results showed that students' knowledge in some areas, in particular, safety measures during gas leaks and fires, is insufficient. Recommendations are put forward for organizing special training sessions and practical training to eliminate the shortcomings identified in the article.

Keywords

Emergency situations, first aid, medical students, level of training, questionnaire, life safety, practical skills, safety measures.

The relevance of the topic is that today various emergency situations - fires, traffic accidents, electric shocks, explosions, burns and other accidents - occur frequently. In such cases, the provision of quick and correct first aid is of great importance in saving human life. Since medical students are specialists working in the healthcare system in the future, their skills to act quickly and correctly in emergency situations must be sufficiently developed. Therefore, it is important to assess the knowledge and practical skills of students in this area and identify existing shortcomings. The results of this study will determine the level of first aid provided by students, and based on the identified shortcomings, proposals can be developed to improve practical training and training.

Research objectives: Study of scientific literature on first aid in emergency situations. To determine the level of knowledge among medical students by conducting a survey. To assess students' skills to act in emergency situations. Analyze the results obtained and identify existing shortcomings.

Develop proposals aimed at improving knowledge and skills in first aid.

Literature review. First aid in emergency situations is an important component of the healthcare system. In particular, medical students, as future doctors, need to be prepared to provide prompt and appropriate assistance in such situations. First aid includes a set of important medical measures aimed at saving the life of the injured person, reducing complications, and stabilizing the patient's condition until further professional medical care. Therefore, the formation of knowledge and practical skills in providing first aid in emergency situations among medical students is one of the important tasks of the medical education system [1]. Scientific studies conducted in recent years in different countries show that the level of knowledge in first aid among medical students varies. According to the results of a study conducted by Hisam and colleagues, it was found that the majority of medical students, despite

knowing the theoretical foundations of first aid, do not have sufficient training in providing practical assistance in emergency situations [2]. The results of the study show that despite the theoretical knowledge acquired during the study process, students face difficulties in real-life situations due to insufficient organization of practical training. Another study examined the level of knowledge of first aid among medical students and found that students do not always make the right decisions in emergency situations. Researchers attribute this to the lack of special training in emergency preparedness [3].

At the same time, although most students have theoretical knowledge, it is emphasized that simulation exercises and training are necessary to develop practical skills. A study conducted by Alanazi et al. assessed the level of knowledge and skills in first aid among medical students. According to the results of the study, the percentage of students with a high level of knowledge in first aid is relatively low, and most students have an average level of knowledge [4]. The authors attribute this to the lack of special courses in emergency medicine in educational programs. A study conducted by Elsakkar et al. studied the level of knowledge of medical students in first aid in cases of poisoning. According to the results of the study, it was found that students do not fully know the algorithms for providing first aid to patients in emergency situations related to poisoning [5]. This indicates the need to develop practical skills in emergency situations during medical education. The level of knowledge of students at different stages of the educational process has also been noted in scientific studies. In a study conducted by García-Blaya et al., the level of knowledge of first aid among students studying in different courses was compared. According to the results of the study, although the level of knowledge of senior students was significantly higher than that of junior students, the overall level of preparation was found to be insufficient [6]. In a study conducted by Run et al., the level of knowledge of university students in first aid was studied. According to the results of the study, although students know the basic principles of providing assistance in emergency situations, most of them do not have sufficient experience in providing practical assistance [7]. Therefore, the authors emphasize the need to increase practical training in the educational process. Many scientific studies show that special training in first aid significantly increases students' knowledge. A study by Basuhail et al. found that students who received first aid training were able to make faster and more accurate decisions in emergency situations [8]. It was also noted that such training increased students' self-confidence and helped them to act proactively in emergency situations. A study by Altintas et al. also showed that there was a significant gap between theoretical knowledge and practical skills among students.

Research has shown that students have theoretical knowledge of first aid, but they have difficulty applying this knowledge in real-life situations [9]. A study by Al-Qahtani et al. examined the level of knowledge and attitudes about first aid among medical students. The results showed that students have a good understanding of the need to provide assistance in emergency situations, but their practical skills are not sufficiently developed [10]. A study by Hassan et al. also shows that the level of knowledge about first aid among students is insufficient. According to the results of the study, most students do not have sufficient knowledge about cardiopulmonary resuscitation, stopping bleeding, and providing assistance in shock [11]. Some studies also show that the level of knowledge about first aid in emergency situations among medical students gradually increases during the study process. However, this knowledge often remains at the theoretical level and requires specialized training to develop practical skills [12]. Many scientific sources have noted that simulation training and practical exercises in first aid significantly improve student readiness. Simulation-based training methods allow students to prepare in conditions close to real emergency situations and develop their

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ability to make quick decisions [13]. Researchers also emphasize the need to improve medical education programs to develop knowledge and skills in providing first aid in emergency situations.

In particular, it is recommended to include additional training in the basics of emergency medicine, traumatology and resuscitation in the curricula [14]. In general, the results of scientific research indicate the need to develop knowledge and practical skills in providing first aid in emergency situations among medical students. Therefore, it is important to widely introduce practical training and simulation exercises in the medical education process, along with theoretical knowledge [15]. Providing first aid in emergency situations is one of the important components of the health system. In particular, medical students, as future doctors, need to be prepared to provide prompt, accurate and effective assistance in such situations. According to the World Health Organization, timely first aid provided in emergency situations can save the patient's life in many cases. Therefore, the issue of developing knowledge and practical skills in providing first aid in emergency situations among medical students is one of the important areas of the modern medical education system [16]. In recent years, scientific studies conducted in various countries have aimed to assess the level of knowledge of first aid among medical students. The results of the studies show that, despite knowing the theoretical foundations of first aid, the majority of students have difficulties in applying practical skills. This indicates that the ability to make quick and correct decisions in emergency situations is not sufficiently formed [17]. Some studies also emphasize the importance of the level of psychological preparation for providing assistance in emergency situations among medical students. In emergency situations, a person's psychological state directly affects the speed of his decision-making and the effectiveness of providing assistance. Therefore, it is necessary to develop not only theoretical knowledge, but also psychological preparation of students [18]. Organizing first aid training in the medical education system will help to significantly increase the level of knowledge of students. The results of a number of studies show that students who have undergone special training courses and training have shown high results in providing assistance in emergency situations [19]. Such training allows students to develop practical skills in conditions close to real situations. Simulation-based training methods are also important in improving the readiness of medical students. Simulation-based training helps students learn to make decisions in situations close to real conditions by modeling emergency situations. This serves to increase students' practical experience and develop skills for effective action in emergency situations [20]. Many studies emphasize the need to regularly update first aid knowledge and skills. Because over time, acquired knowledge can be forgotten or outdated. Therefore, it is important to organize periodic training and refresher courses for medical students [21]. Studies also show that the level of first aid knowledge among medical students often depends on the content of the curriculum and the number of practical exercises. It has been found that students' knowledge level in educational institutions with more practical training in emergency medicine in the curriculum is significantly higher [22]. In addition, the level of knowledge in first aid may also depend on the personal interest and motivation of students. According to the results of research, students who expressed an interest in the field of emergency medicine had higher knowledge and skills in first aid [23]. The use of modern pedagogical technologies is also important to increase the level of knowledge in first aid in emergency situations. Interactive teaching methods, analysis of clinical situations, practical training and simulation exercises help to consolidate students' knowledge [24]. The results of research also show that the level of knowledge in first aid may also be related to students' sense of social responsibility. Medical students, having a deep understanding of their responsibility to

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society, strive to provide active assistance in emergency situations [25]. In general, the results of scientific research indicate the need to develop knowledge and practical skills in providing first aid in emergency situations among medical students. Therefore, it is important to widely introduce practical training, simulation exercises, and modern pedagogical technologies in the medical education system, along with theoretical knowledge [26].

First aid is provided by the population at the site of the injury to themselves and others, by the personnel of the SP SD and other structures of the FM, as well as by military units participating in eliminating the effects of an enemy attack. The importance of this medical aid is very high, since the correct and timely assistance provided is of fundamental importance for saving human life, preventing or alleviating the patient's condition.

Results. The conducted analysis showed that the level of knowledge in providing first aid in emergency situations among medical students was generally average, but there were significant gaps in some areas. In particular, the percentage of incorrect answers was relatively high in questions related to the correct application of safety measures in case of gas leaks, safe behavior in case of fire in closed buildings, and the selection of first aid algorithms in case of unconsciousness. At the same time, it was found that the majority of students understand the need to provide assistance in emergency situations and have a general idea of the theoretical foundations of first aid.

The results also showed that the level of knowledge may be somewhat related to the stage of study, the level of participation in practical training, and interest in emergency medical care. Students who participated in simulation training or training were distinguished by a clearer understanding of the algorithms for correct action in emergency situations and a tendency to make decisions faster.

The survey method was used to determine the level of knowledge and preparation for providing first aid in emergency situations among medical students. The survey was created using the Google Form platform and distributed among students online. The survey questions were based on real-life situations that may occur in emergency situations. The questions were aimed at assessing students' knowledge of making the right decision and providing first aid in emergency situations, and each question had multiple answer options.

You can view the survey at the link below. https://docs.google.com/forms/d/e/1FAIpQLSdslK0Jw4IXr66wdo8cNF2ALDKo5zeTsRUi_pbjG2mL07vL0w/viewform?usp=sharing&ouid=112746505779009745905.

The survey covered the following topics: identifying safe measures for the population to take in the event of a nuclear explosion, taking the correct safety measures when a gas leak or smell of gas is detected, providing first aid in the event of burn injuries, knowing the procedure for providing safe assistance in cases of electric shock, identifying first aid skills in cases of unconsciousness, and applying emergency medical measures in cases of severe bleeding. According to the results, 88% of the participants were 2nd year students, 7% were 1st year students, and 5% were 3rd year students.

Question	Correct answer	Wrong answer	Question	Correct answer	Wrong answer
1	79	21	7	92	8
2	52	48	8	70	30
3	76	24	9	88	12
4	71	29	10	44	56
5	87	13	11	62	38
6	74	26			

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The results showed that there are certain differences in the level of knowledge of medical students on how to act correctly in some emergency situations. In particular, a relatively high level of incorrect answers was recorded in questions related to the correct application of safety measures in case of gas leakage or gas smell, safe behavior in case of fire in a building, and the selection of first aid algorithms in case of fainting. This situation indicates that there is an opportunity for students to further strengthen their knowledge and practical skills in making quick and informed decisions in emergency situations.

In this regard, it may be appropriate to use simulation exercises, interactive trainings, and methods aimed at developing practical skills more widely in the educational process. It is expected that such an approach will serve to combine theoretical knowledge with practical activities and consistently increase students' readiness to act safely and effectively in emergency situations.

Therefore, in order to eliminate these shortcomings, we would like to propose the implementation of the following measures: organizing special training sessions aimed at explaining safety measures in case of gas leaks, conducting evacuation exercises on the correct actions to take in the event of a fire inside a building, and organizing practical training sessions on providing first aid in cases of unconsciousness.

Discussion. The results are somewhat consistent with the existing scientific literature and indicate that, despite the availability of theoretical knowledge of first aid among medical students, there are still problems with its practical application in real emergency situations [2, 9, 17]. This discrepancy is often explained by the insufficient provision of practical exercises and special training in emergency preparedness in educational programs [3, 4]. As a result, students may face certain difficulties in making quick and informed decisions in emergency situations. It is noted in scientific sources that the use of simulation-based educational technologies significantly increases the practical readiness of students [8, 13, 20]. Such an approach helps to develop quick thinking, clinical situation assessment, and teamwork skills by modeling conditions close to real situations. It is also noted that effective action in emergency situations is directly related to the level of psychological stability and stress tolerance (18). In this regard, it may be appropriate to expand the practical components of emergency medicine, resuscitation, and traumatology in medical education programs [14, 22]. In addition, periodic training and refresher courses can strengthen the practical application of theoretical knowledge [21]. In general, a comprehensive pedagogical approach aimed at integrating theoretical training with practical training will consistently improve the readiness of medical students to act effectively and safely in emergency situations.

Conclusion. The results of the survey showed that the level of knowledge and practical training in emergency first aid among medical students was not sufficiently formed in some areas. In particular, a high percentage of incorrect answers was noted in questions related to safe behavior in case of gas leakage, applying correct evacuation measures in case of fire in closed buildings, and performing first aid algorithms in case of unconsciousness. This situation indicates the need to further improve the readiness of students to make quick and informed decisions and take effective practical actions in emergency situations. In this regard, it may be appropriate to more widely integrate simulation training, practical exercises, and interactive teaching methods into the educational process. It is expected that such an approach will serve to consolidate theoretical knowledge among students, develop practical skills, and consistently increase the level of professional training in emergency situations.

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REFERENCES

1. Ermatov N.J., Xayitov J.B., Ortiqov B.B. "Hayot faolyati xavfsizligi.Fuqaro muhofazasi" ,Darslik. "Fan ziyo nashriyoti" 2025 y
2. Hisam A., Zakaria M., Ashraf M. First aid knowledge among medical students. Journal of the Pakistan Medical Association. 2015.
3. Alanazi A., et al. Knowledge and attitudes toward first aid among medical students. International Journal of Emergency Medicine. 2018.
4. Elsakkar M., et al. Knowledge of first aid among medical students in emergency situations. BMC Medical Education. 2020.
5. García-Blaya J., et al. Basic life support knowledge among medical students. Resuscitation. 2019.
6. Run C., et al. Assessment of first aid knowledge among university students. Journal of Emergency Medicine. 2017.
7. Basuhail M., et al. Effectiveness of first aid training among medical students. BMC Medical Education. 2019.
8. Altintas K., et al. First aid knowledge among university students. Journal of Public Health. 2015.
9. AlQahtani S., et al. Assessment of CPR knowledge among medical students. Saudi Medical Journal. 2017.
10. Hassan M., et al. Knowledge of cardiopulmonary resuscitation among medical students. Journal of Emergency Medicine. 2018.
11. Pergola A., Araujo I. First aid training in university students. International Journal of Health Sciences. 2009.
12. Smith G., et al. Emergency preparedness and first aid training among students. Emergency Medicine Journal. 2016.
13. Bollig G., et al. Training in basic life support and first aid among medical students. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine. 2011.
14. Roshana S., et al. Basic life support knowledge among health science students. Journal of Clinical and Diagnostic Research. 2012.
15. Mpotos N., et al. Improving CPR skills through simulation training. Resuscitation. 2013.
16. Hamilton R. Nurses' knowledge and skill retention following CPR training. Journal of Advanced Nursing. 2005.
17. World Health Organization. First Aid Guidelines and Education. Geneva: WHO; 2016.
18. American Heart Association. Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. 2020.
19. Zideman D., et al. European Resuscitation Council Guidelines for First Aid. Resuscitation. 2015.
20. Böttiger B., et al. Basic life support training and education. Resuscitation. 2016.
21. Perkins G., et al. European Resuscitation Council Guidelines for resuscitation. Resuscitation. 2021.
22. Cheng A., et al. Simulation-based learning in medical education. Medical Education. 2014.
23. Lateef F. Simulation-based learning in medical education. Journal of Emergencies, Trauma and Shock. 2010.
24. Knowles M. Adult learning theory and medical education. Medical Teacher. 2015.
25. Cook D., et al. Technology-enhanced simulation for health professions education. JAMA. 2011.
26. Ericsson K. Deliberate practice and acquisition of expert performance. Academic Medicine. 2004.
27. Issenberg S., et al. Features and uses of high-fidelity medical simulations. Medical Teacher. 2005.