

Cite as: Archiv EuroMedica. 2024. 14; 3. DOI [10.35630/2024/14/3.332](https://doi.org/10.35630/2024/14/3.332)

Received 23 May 2024;
Accepted 18 June 2024;
Published 24 June 2024

FIRST AID AFTER USE OF CONDUCTED ENERGY DEVICES (CEDS) BY POLICE OFFICERS IN POLAND - PRELIMINARY STUDY

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ABSTRACT

Introduction: In order to serve the public, maintain security and public order, police officers have been properly trained and equipped with the necessary means to ensure the safety of both the people against whom action is taken and the police officers themselves. Conducted energy devices (CEDs) have been on the equipment of police officers since 2007. However, it is only since 2013 that there has been a significant process of introducing this means of direct coercion into the formation, resulting in its use. Progressive purchases of the equipment have led to the introduction of a corresponding training process. It should be noted that the CED is the newest means of direct coercion, which, however, requires interference with the body of the person against whom it is used. Such exposure can lead to dangerous impairments of body function. Police officers are expected to have the knowledge and skills to provide first aid, and even more so to provide assistance after the use of a direct coercive agent.

Aim of the study: To analyze the preparedness of police officers to provide first aid to a person after the use of a conducted energy device, as well as to equip police officers with the necessary tools to ensure the ability to provide first aid.

Material and methods: The study was conducted on a group of Polish police officers authorized to use a conducted energy device while performing their duties. The study used the method of a diagnostic survey with a survey questionnaire. A total of 62 police officers participated in the study. The survey was conducted online in 2022. In addition, an analysis of data from the literature, legal acts, media sources and scientific

publications was carried out.

Results: The study included 62 police officers authorized to use a conducted energy device (83.6% user; 16.4% instructor) with varying length of service, serving in all types and units of the Police Department. The majority of police officers authorized to use a CED are certified as rescuers (61.3%) under the Law on State Emergency Medical Services. Noteworthy in the opinion of the authors of the study is the fact that the vast majority of the surveyed, as many as 71% of police officers, did not receive additional training in first aid to a person against whom a CED was used.

Conclusions: According to the authors, the issue of first aid after the use of a CED was treated marginally. In Poland, the scarcity of literature on this area does not provide reliable data. Our study clearly stated that the training of police officers on first aid requires serious modifications, as well as the logistics of equipping them with specialized medical supplies.

Keywords: first aid, conducted energy device, training, safety, Police

INTRODUCTION

Police officers in Poland, due to the nature of their official tasks, are considered the group most vulnerable to loss of health and life. Due to the increasing brutalization of society and the changing world, police officers are constantly faced with new tasks [1]. For the safety of police officers performing official duties, personality predispositions remain important, which translate into the activities undertaken. It is also indispensable to develop skills in the use of direct coercive measures in situations where the likelihood of their use becomes real. The legislator has equipped the police with the powers granted by the Law on Direct Coercive Means and Firearms of May 24, 2013 [2]. It should be noted that the means of direct coercion shall be used or used in a manner necessary to achieve the objectives of this use or use, in proportion to the degree of danger, choosing the means with the least possible annoyance. One of the means of direct coercion is an object designed to incapacitate persons by means of electrical energy (conducted energy device) [3]. Issues concerning the use/use of the conducted energy device (CED) by authorized officers are regulated by law [2].

In accordance with Decision No. 48 of the Police Chief Commandant of February 8, 2022, on the determination of designs and types of police armaments [4], the Polish Police are equipped with Taser X26 conducted energy device [5], Taser X2 [6] and Taser X26P [7], as illustrated in Figure 1. The term CED, an electronic incapacitating device, will be used interchangeably as a synonym for an object designed to incapacitate persons by means of electricity. Figure 2 illustrates the significant progress of the implementation of CED in the Polish Police between 2013 and 2022, which translates into the safety of many people.



Fig. 1. The conducted energy devices used by the Polish Police [8].

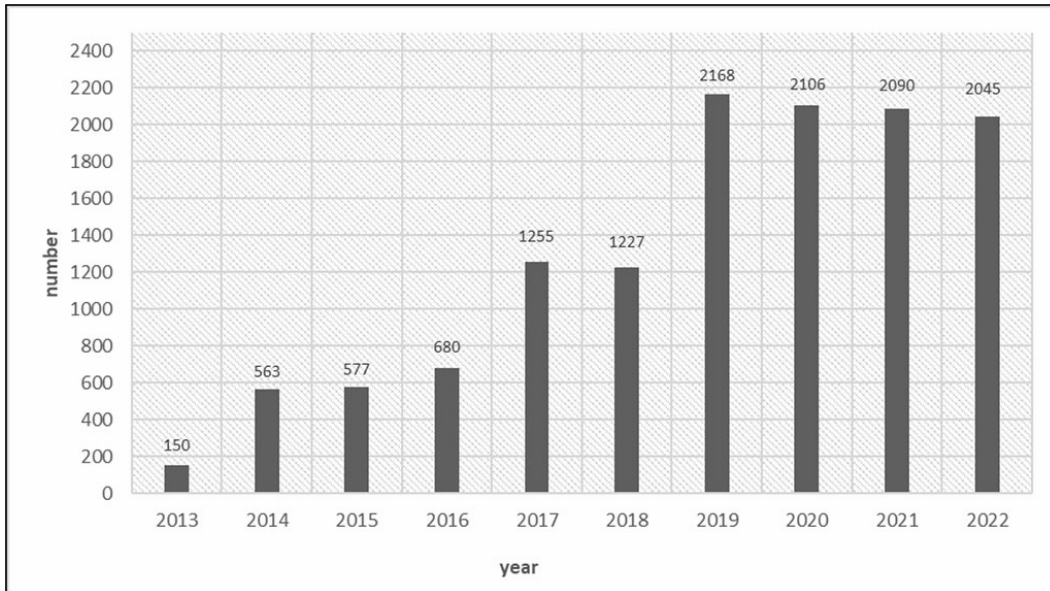


Fig. 2. Quantitative status of conducted energy devices in the Police in Poland from 2013 to 2022 [9].

TRAINING OF POLICE OFFICERS IN THE USE OF CONDUCTED ENERGY DEVICES

Training of police officers in the use of conducted energy devices is carried out in two courses. The first course grants authorization to use the device during the performance of official duties. It lasts 2 days during which a police officer acquires knowledge of the device and the skills to use the stun gun. The course ends with a theoretical and practical exam. The next stage of training is the instructor course, which lasts 5 days and its completion gives the authority to train police officers in the subject area. The number of CED users in Poland is shown in Figure 3.

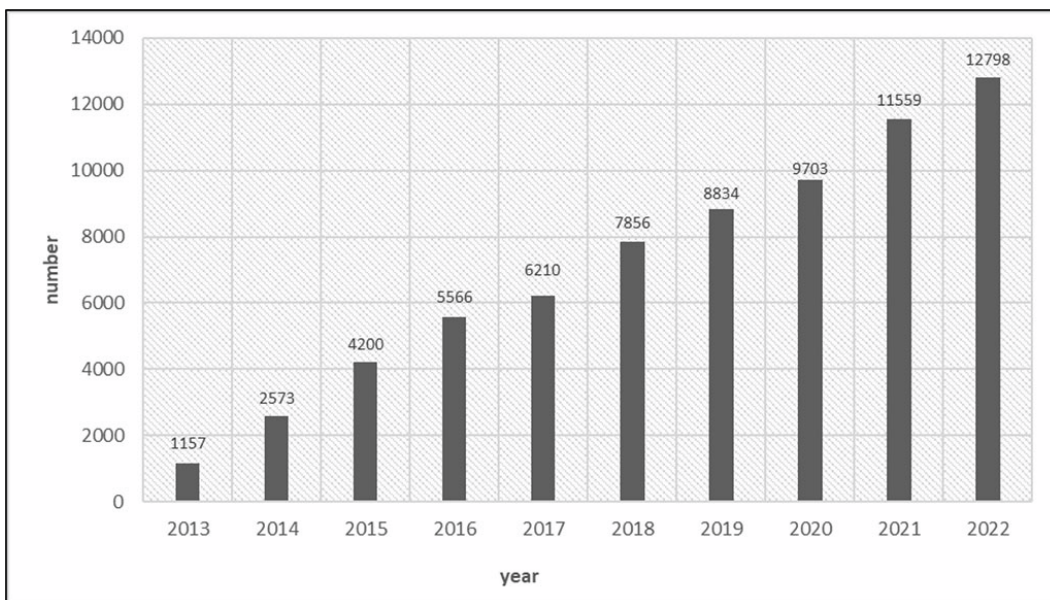


Fig. 3. Number of users of conducted energy devices between 2013 and 2022 in Poland [9].

FIRST AID

Article 36 (1) of the Law on Direct Coercive Measures and Firearms of May 24, 2013 [2] literally indicates that "in the event that as a result of the use or application of direct coercive means a person has been injured or there have been other apparent symptoms of danger to the life or health of that person, the authorized person shall immediately provide first aid to that person, and, if necessary, ensure that qualified first aid or emergency medical service providers are summoned." Attention should be drawn here to the term "first aid," as defined under the Law of September 8, 2006 on State Emergency Medical Services [10], as "a set of actions taken for the purpose of saving a person in a state of medical emergency performed by a person on the scene (...)". However, there is no doubt that police officers use the measure in question in

the course of their duty when legal and factual prerequisites arise, as illustrated in Figure 4 below.

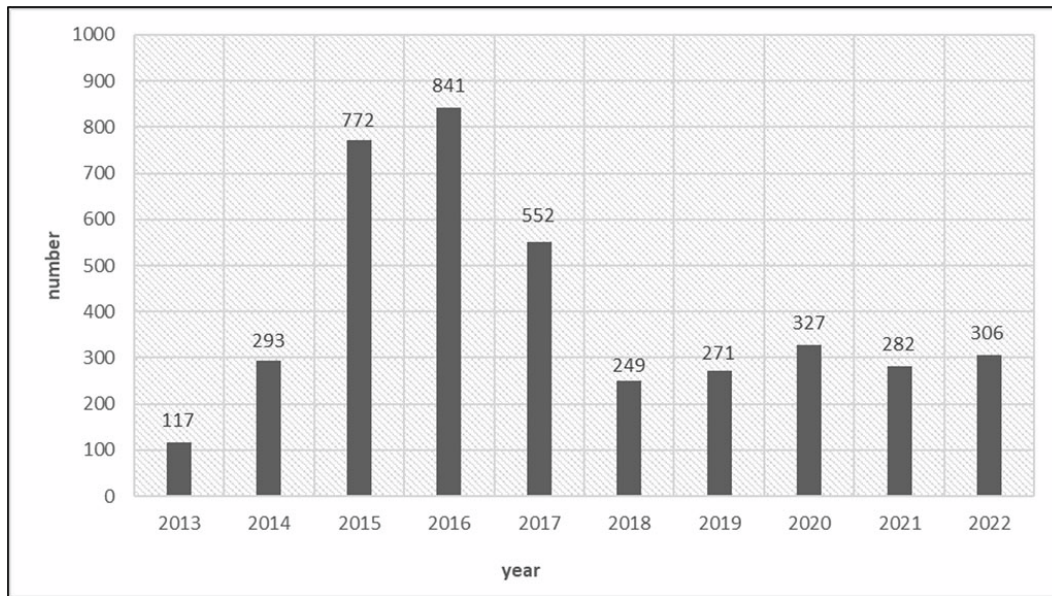


Fig. 4. Number of cases of CED use by year in Poland [9].

Relevant to our work is a situation in which police officers after use of a CED are forced to provide first aid to the person against whom they have used the device. Within the framework of the courses on CED related to first aid implemented in the police, 2 teaching hours are allocated. During the course, the following topics are discussed: the duty to provide first aid in the Police, the algorithm of action at the scene of an incident in a situation of danger to the life and health of the victim, cardiopulmonary resuscitation of adults, the use of an automatic external defibrillator, the algorithm of post-exposure (after the use of electrodes) [11].

Building a system of life and health protection in the police is related to, among other things, with the appropriate configuration of equipment and resources for first aid. In the case of police officers, this is Order No. 55 of the Chief of Police dated June 3, 2019 [12] which includes: individual waterproof dressing type W piece 1 and 5 pairs of nitrile gloves.

MEDICAL IMPLICATIONS OF CONDUCTED ENERGY DEVICES

The equipping of uniformed formations with conducted energy devices has been met with criticism regarding the health risks of the device. The human rights community has stressed that the device can "kill" the person against whom the device is used [13]. On the other hand, a fundamental question must be asked: can the conducted energy devices, which has been introduced into the equipment of many uniformed formations around the world, lead to cardiac arrest, and if so, to what extent? Certainly, those involved in the training of police officers, as well as the officers themselves, could note that any direct coercive measure they have on their equipment could lead to a situation that could result in the death of a person. Such incidents accompany officers of many services and are not caused by the use of a CED alone. In most cases, actions leading to death are caused by a human error factor [14].

The world of medicine has not remained indifferent to this type of event and the possibility of scientific research in this direction. Noteworthy is the research conducted by Richard Stevenson (consultant in emergency medicine of Glasgow) and Ian Drummond-Smith (Superintendent of Police - Devon & Cornwall Police) in the publication "Medical implications of Conducted Energy Devices in law enforcement." The study points out the medical implications of CED used by law enforcement officers in the UK. The authors are of the opinion that the use of a CED is associated with injuries, but most are classified as minor. Death or more severe injuries described in the medical literature are rare [15]. Equally interesting studies have been conducted by several authors, who demonstrated the effects of three models of Taser devices in the area of action on the pig heart. It should be noted here that two models of devices are on the equipment of the Polish Police. These are the Taser X26 and Taser X2 devices. The third device was the Taser 7 stun gun introduced by the manufacturer Axon in October 2018. The study involved 5 pigs on which 252 thoracic exposures were made. The study showed that the Taser 7 and X2 devices are not statistically different in their effects on the heart. The Taser X26 device, which is the oldest device and, which needs to be emphasized, since 2014 no longer manufactured by Axon, as well as not purchased by the Polish Police, significantly affects the heart. The authors of the study noted that this was the first study to examine the effects of simultaneous multi-probe exposures on the heart [16]. The distance between the probes and the heart is a key factor in determining whether the device can affect the heart. Ventricular fibrillation (VF), ventricular tachycardia (VT) and the likelihood of cardiac capture or pacing for given sites decreased with

the horizontal distance (radius) of the probes from the heart at the skin surface. The farther the probe is penetrated from the heart, the lower the risk of affecting the organ. The risk during use of the device causing cardiac arrest in humans is not zero, but it is far enough away. The estimated risk is on the order of 1 in 100,000 uses [17].

Aim of the study: To analyze the preparedness of police officers to provide first aid to a person after the use of a conducted energy device, as well as to equip police officers with the necessary tools to ensure the ability to provide first aid.

MATERIALS AND METHODS

The main research problem was formulated in the form of a question: *How are police officers prepared to provide first aid to a person against whom an conducted energy device was used?* With regard to the main research problem posed, a hypothesis was adopted, which was: *Police officers are inadequately prepared to provide first aid to a person getting tased. Ensuring adequate preparation requires action, involving changes in training and equipment areas.*

Theoretical and empirical research methods were used in the various stages of the research work. When studying the specifics of the response of officers on providing first aid to a person getting tased, theoretical methods were used. The authors conducted the analysis of data from the literature on CED, legal acts, media sources and scientific publications. The auxiliary methods were synthesis, generalization and inference, which in the final stage of the research made it possible to capture and elaborate the results and formulate conclusions. How police officers are prepared to provide first aid after using a CED was determined by using an empirical method. The study was based on the method of diagnostic survey using the survey technique and tool, which was the authors' survey questionnaire. The questionnaire included 15 questions, regarding the purpose of the study. It consisted of a metric and a core part (relevant questions). The metric included 6 questions, while the core part included 9. All questions were closed. The first part of the survey questionnaire - the metric - included questions about the characteristics of respondents relevant to the problems: gender, length of service (length of service), type of service, organizational unit and powers held (in the field of CED - user, instructor and in the field of first aid - rescuer). The survey was completely anonymous; there was an anonymity statement at the beginning of the questionnaire. The results were used only to obtain reliable data for our study. The survey was conducted online due to the current epidemiological restrictions in the country caused by the SARS-CoV-2 virus (year 2022). The results of the questionnaire were downloaded in the form of a Microsoft Excel document and analyzed to examine the purpose of the study and thus accept or reject the hypothesis. As an auxiliary method, the authors used observation due to the fact that they conducted training sessions on this subject.

CHARACTERISTICS OF THE STUDIED AREA

The study was conducted on a group of police officers who are authorized to use CEDs during their official tasks, i.e. officers who have taken the relevant local in-service training course granting them user privileges or completed a specialized course granting them instructor privileges. Under current police regulations, only police officers with the aforementioned authorizations may use a conducted energy device during official tasks.

The study included 62 police officers authorized to use CEDs. The majority of the respondents were men 98.4%. Most of the respondents were officers with length of service in the range of 11 to 15 and 16 to 20 years of service, accounting for 27.4% each. More than 19% of the respondents were formed by police officers with more than 20 years of seniority. In view of this, it should be considered, that the study group consisted of experienced police officers. More than 44% of respondents serve in the Central Criminal Investigation Department, more than 29% of respondents serve in Counter-terrorism Sub-Departments, 8.2% of respondents serve in the City Police Department and County Police Department, 4.9% of respondents serve in the Voivodship (Capital) Police Department and Police Academy. As for the authorizations held to use an CED official tasks, the vast majority of respondents are users of the devices (83.6%). The remaining respondents have instructor authorizations, which accounts for 16.4%.

RESULTS

The overwhelming majority of the respondents (45.2%) have received training to qualify them to deploy a CED within 2 to 5 years and more than 5 years (Figure 5).

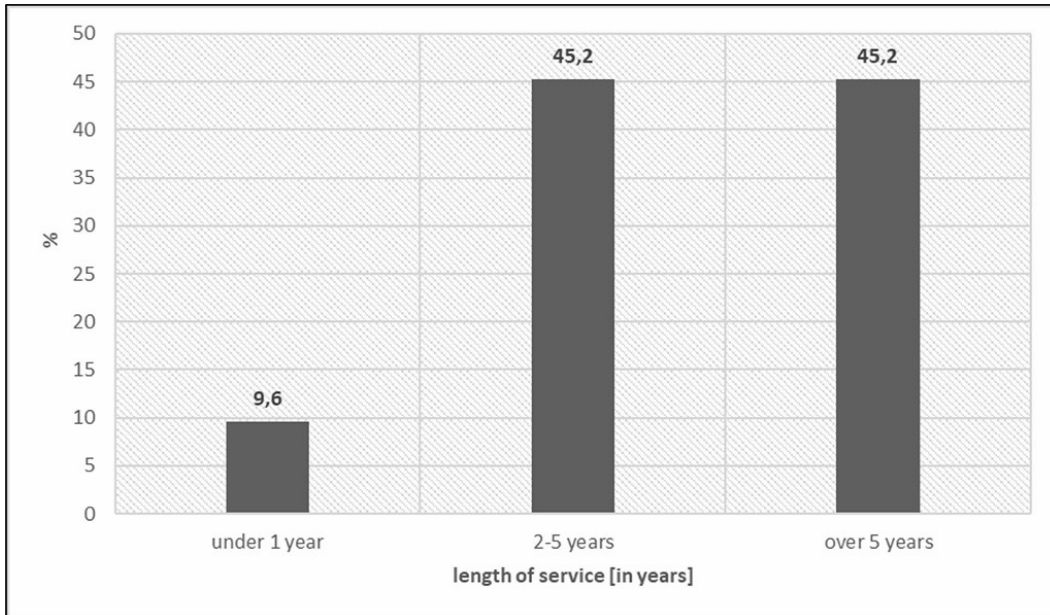


Fig. 5. Experience in using a CED [own source].

As many as 61.3% of respondents are certified as rescuers under the provisions of the Law on State Emergency Medical Services. More than 38% of respondents do not have such authorizations (Figure 6).

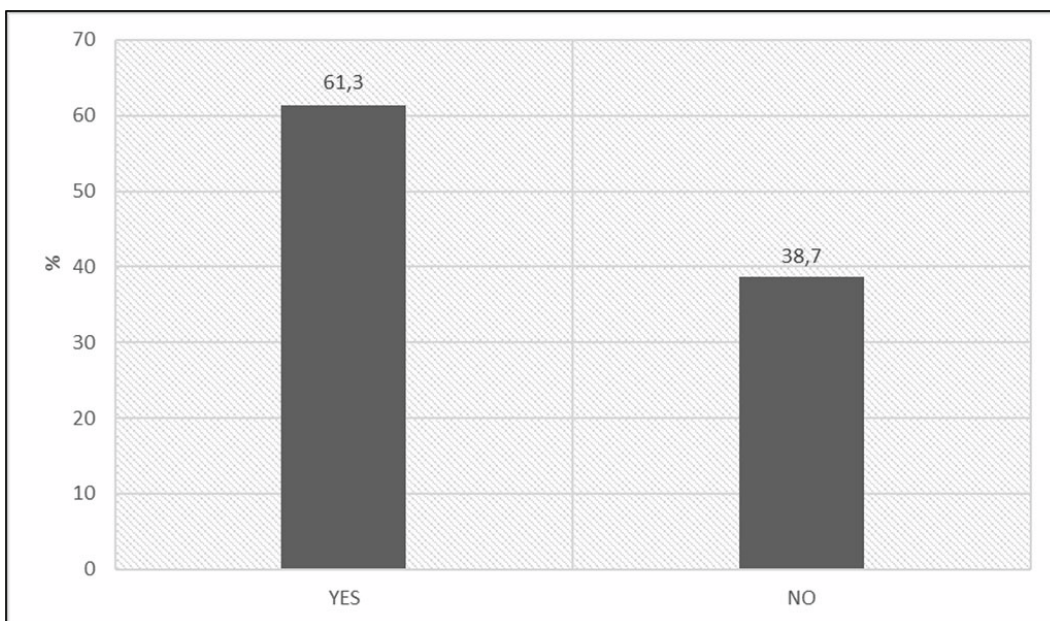


Fig. 6. Holding the qualification of "rescuer" under the Law on State Emergency Medical Services [own source].

The vast majority of respondents (79%) believe that the training they received in the use of a CED prepared them to provide first aid to the person against whom they used the device. Twenty-one percent of respondents take the opposite view (Figure 7).

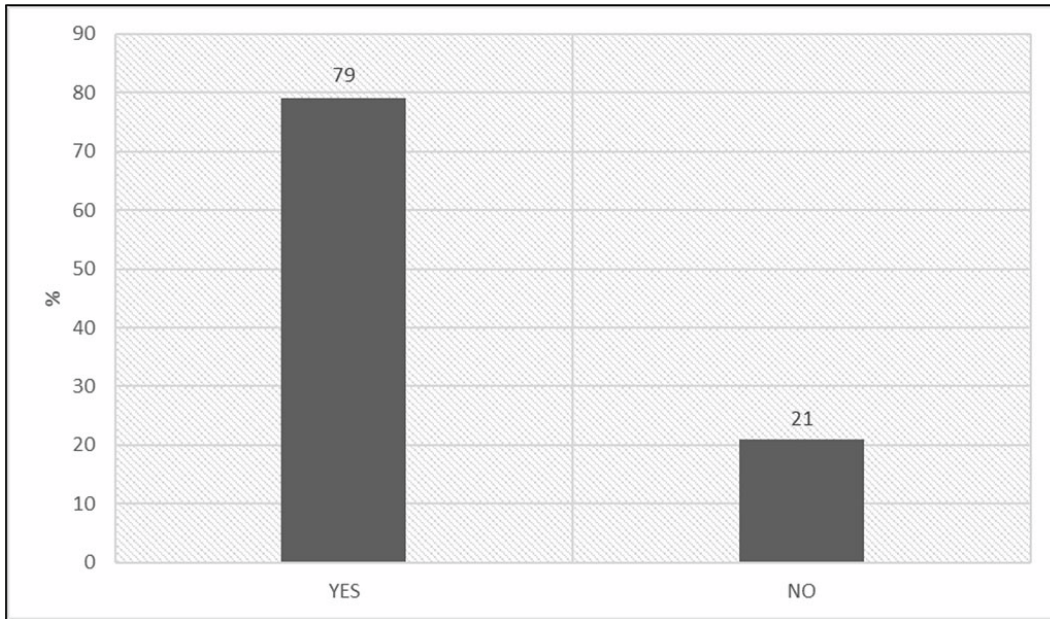


Fig. 7. Opinion on whether the training on the use of CEDs prepared respondents to provide first aid after using the device: Do you think the training you received in using a CED prepared you to provide first aid to a person who got shocked? [own source].

Noteworthy is the fact that the vast majority of respondents, 71% of police officers, did not receive additional training in first aid to a person exposed to CED (Figure 8).

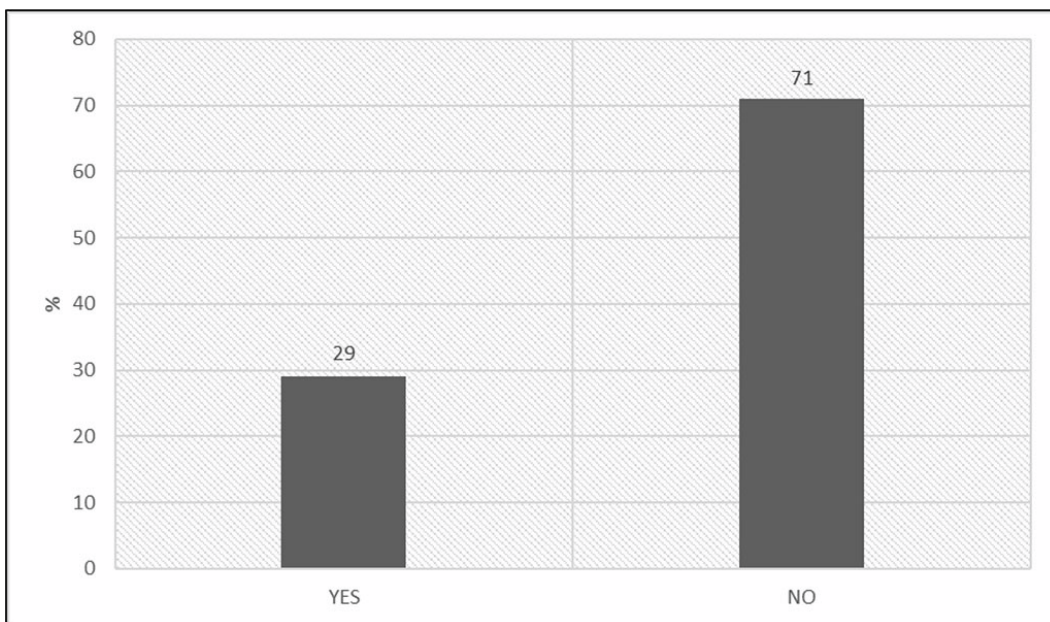


Fig. 8. Those who had additional first aid training to a person exposed to a CED [own source].

Therefore, the majority of police officers surveyed (85.5%) said that additional training in first aid after using a CED is required. More than 14% of respondents had a different opinion on the subject (Figure 9).

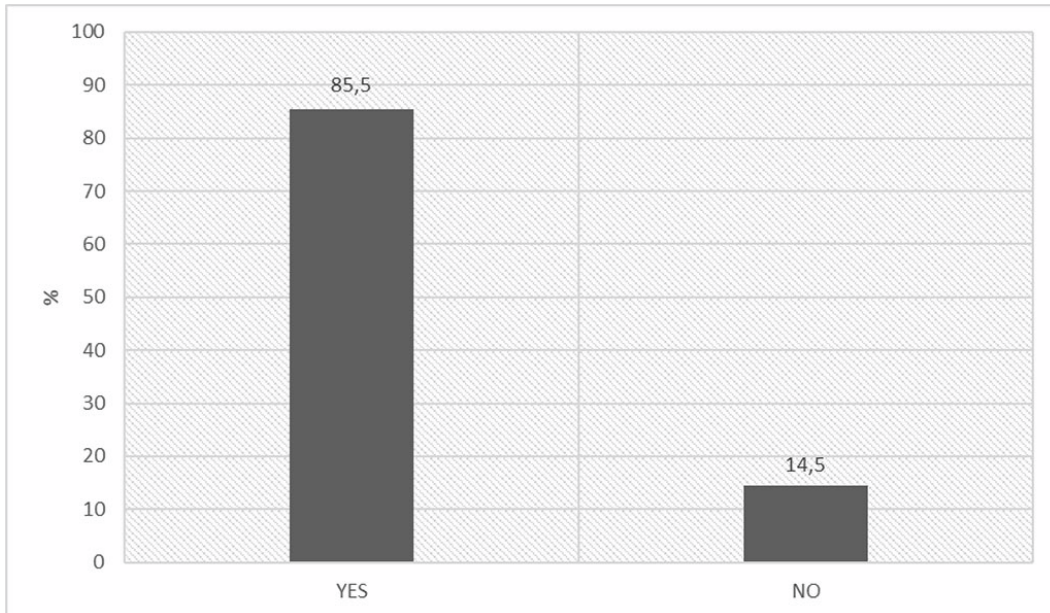


Fig. 9. Opinion on the introduction of additional first aid training after the use of an electric stun gun: Do you think additional training in first aid after using an electric stun gun is required? [own source].

Providing first aid to a person who got shocked, in addition to the skills there should be equipment for providing such aid. More than 98% of respondents agree that police officers should be equipped with individual medical packs designed for first aid (Figure 10).

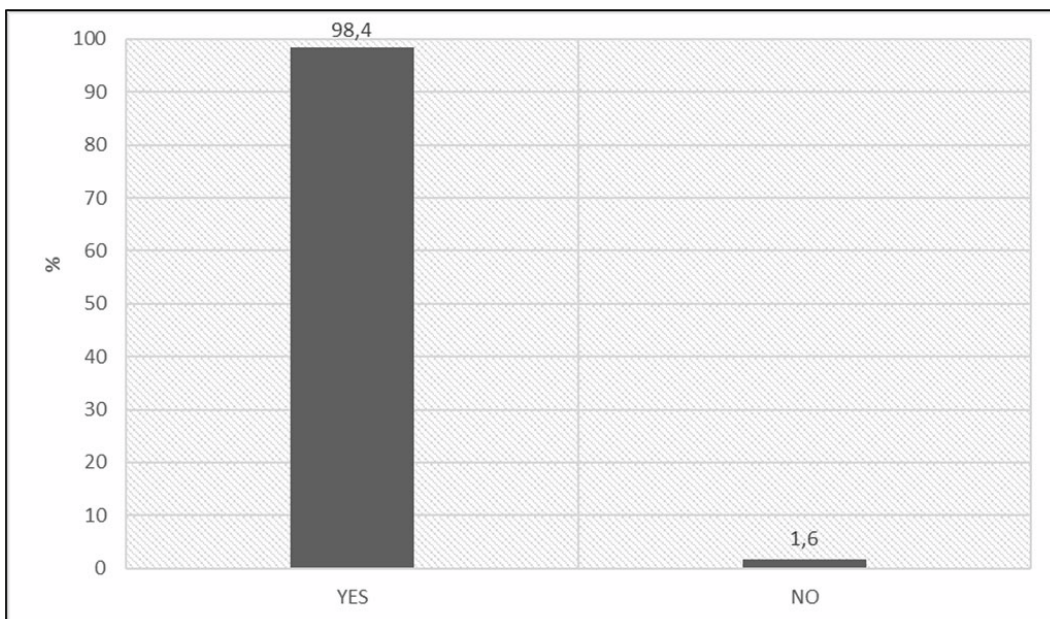


Fig. 10. Opinion on providing police officers with individual medical kits for first aid: Do you think police officers should have individual medical kits for first aid? [own source].

DISCUSSION

The importance of providing first aid in the activities of police officers has evolved over the years. The issue related to the use of conducted energy device in police operations is not a new topic. The struggles of police officers in this area have already more than once faced criticism from the public, as well as from the police community itself. According to the authors, the issue of first aid after using a CED has been treated marginally. In the Polish scientific literature, the subject is poor and does not allow to deepen the knowledge.

The hypothesis set by the authors, as a result of the study, allows us to stress the necessity of ensuring adequate changes in training and equipment of the police officers, which significantly translates into confirmation of our hypothesis.

CONCLUSIONS

The use of a conducted energy device by police officers causes stress, as well as forces additional measures related to first aid. Adequate preparation of police officers for the consequences associated with the use of CEDs (injuries, bleeding, sudden cardiac arrest) will result in greater confidence. It should be noted that it is important for trainers (instructors) to deepen their knowledge of the recommendations of CED manufacturers, as well as the Taser's effects on the human body. In this connection police officers should be equipped with appropriate individual first aid medical kits. The preliminary results of the study show that it is crucial to provide changes in this issue and further research is needed.

AUTHORS' CONTRIBUTIONS

All authors have read and approved the published version of the manuscript.

FUNDING

This research did not receive external funding.

CONFLICT OF INTEREST

The authors report no conflicts of interest.

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