

ORIGINAL ARTICLE

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Evaluation of forensic reports written in the emergency department from the forensic medicine perspective

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Abstract

Our study aimed to review the reports prepared for forensic cases admitted to the Emergency Department of Balıkesir University Faculty of Medicine (Türkiye) and evaluate to review the errors and deficiencies. The sociodemographic characteristics, information obtained about the criminal cases and outcomes of the patients admitted to between 01.01.2021-31.8.2023, whose forensic reports were evaluated as forensic cases, were examined. 902 cases that were evaluated as forensic cases and forensic case reports were kept in our emergency department were included in the study. The mean age of the cases was 37.33 years. When the age distribution was analyzed, it was determined that the highest forensic case application rate was in the 20-30 age group with 22.3%. The most intense season of applications was summer with 37.9%. Traffic accidents were the forensic case with the highest rate among all types of incidents with 23.6% in total applications. The most common site of injury was the head-neck-facial region with 33.3% of the applicants. When the outcomes of the cases were analyzed, it was observed that discharge was the most common with 49.7%. It was observed that 27.5% of the cases were reported to be life-threatening. On re-evaluation, life-threatening status was correctly recorded in 74.3% of the cases. Emergency departments in hospitals are usually the first and most common places where forensic reports are issued. As physicians, we should be aware of our duties and responsibilities in this regard and strive to keep our knowledge about forensic reports and related legal legislation up-to-date and at a high level.

Keywords: Forensic case, life threatening, emergency service

Introduction

In Türkiye, emergency departments are the places where forensic cases are most frequently seen and forensic reports are prepared [1]. Patients can apply to hospital emergency departments at any age and regardless of gender [2]. While emergency departments organize the diagnosis and examinations of emergency patients, they also organize forensic reports as well as the treatment of the applicants who come as forensic cases, if necessary. Among these applications, falls, assault, poisoning, traffic accidents, abuse, burns, gunshot wounds, suicide and injuries are considered as forensic cases [3].

Emergency room doctors are responsible for both the medical treatment of forensic cases and also have important duties

such as organizing the lesions on the body of the patients they forensically evaluate and how they may occur in a report and reporting the incident to the judicial authorities [4]. There are legal obligations of the physician, such as whether the reports to be written are provisional or final reports, and whether there is a life-threatening situation. There are unwanted errors in the reporting process and these errors cause problems in judicial proceedings [5].

In this study, we retrospectively examined the patients admitted, whose forensic reports were evaluated as forensic cases, and the forensic reports were examined with forensic medicine specialists and emergency medicine specialists and it was aimed to review the errors and deficiencies.

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Material and Methods

In our retrospective study conducted at Balıkesir University Faculty of Medicine, Department of Emergency Medicine, the cases that were evaluated as forensic cases in the emergency department, met the inclusion criteria and admitted to our hospital between 01.01.2021-31.08.2023 were included.

The sample of the study will consist of all eligible patients selected from the population according to the inclusion and exclusion criteria. Since the entire population will be used in the study, the full census sampling method (n:1000) will be used. All forensic reports within the study population were obtained retrospectively from the hospital information management system, and appropriate reports were selected according to the inclusion and exclusion criteria.

Deficiencies or inaccuracies in the written reports of the cases included in the study were examined. The deficiencies of the information required in forensic report standards were examined. The study has been approved by the Non-Interventional Research Ethics Committee of Balıkesir University Health Sciences, with decision number 2023/158 dated November 1. 2023.

Statistical analysis

IBM SPSS 25.0 program (SPSS for Windows, Version 25.0, SPSS, Chicago, Illinois, USA) was used for statistical analysis. Descriptive statistics were expressed as frequency (n), percentage (%), mean±standard deviation (SD) and median. The chi-square test was used for comparison between groups. The conformity of the data to normal distribution was evaluated by Kolmogorov-Smirnov test. $p < 0.05$ was considered statistically significant.

Results

During the study period, it was determined that there were 902 forensic cases who were admitted to the emergency department, forensic reports were issued by emergency department physicians and whose data could be accessed. Cases that were registered as forensic cases but whose forensic reports could not be accessed were excluded from the study.

In the 902 forensic reports analyzed, 637 of the cases were male (70.6%) and 265 were female (29.4%). In 902 patients whose age was stated in the reports, the youngest age was 0, the oldest age was 94 and the mean age was 37.33 years. The age range with the highest number of reports was 20-30 years (22.3%), followed by 40-50 years (17.2%) and 30-40 years (15.7%) (Figure 1).

When we categorized the reports according to seasons, it was observed that most reports were issued in summer (37.9%), followed by autumn (24.7%), spring (21.4%) and winter (16%). When we look at the types of incidents, it was observed that the highest number of forensic reports were due to traffic accidents (23.6%). The cases of assault and battery (19.2%) and falling from a height (15.7%) were also the most frequently reported cases (Figure 2).

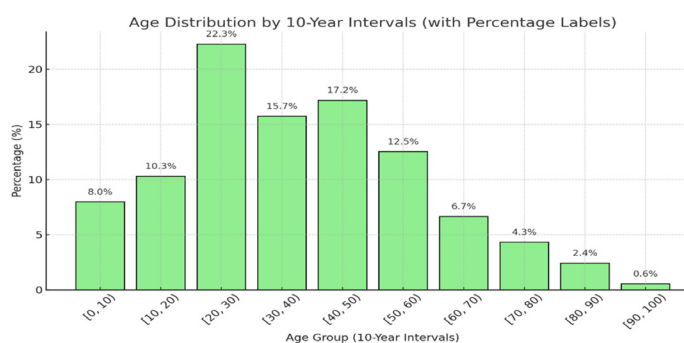


Figure 1. Age data

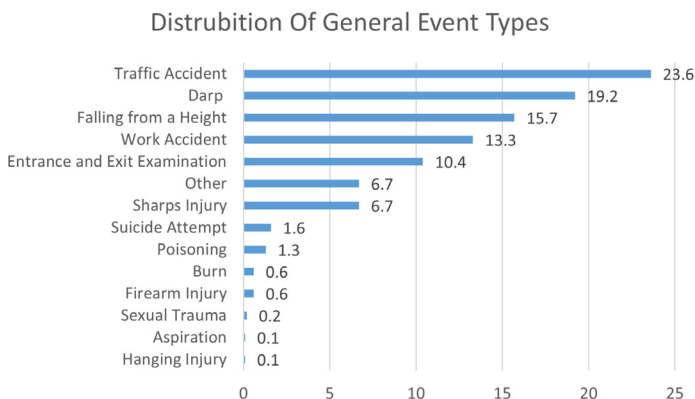


Figure 2. Reasons for judicial incidents

When they were evaluated according to the region of injury, it was observed that the most common site of injury was the head-neck and face region (33.3%). Extremity injuries (31.3%) were another common injury site (Figure 3).

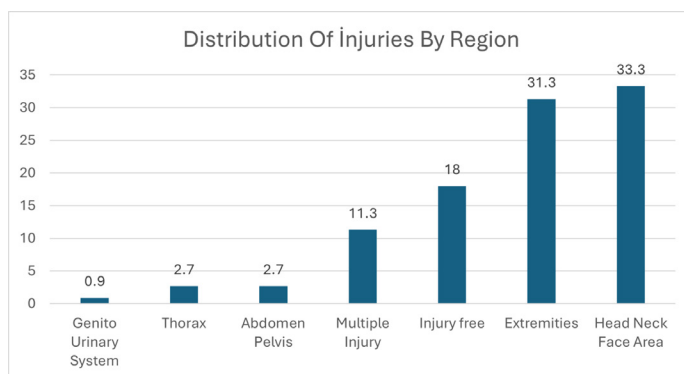


Figure 3. Body parts affected in the case

When the outcomes of the cases admitted as forensic cases were analyzed, it was observed that 49.7% of all cases were discharged and 7.1% were hospitalized. The rate of referral of forensic cases from other hospitals to Balıkesir University Emergency Department was 41.2% (Figure 4).

As for whether the treatment of the patient stated in the forensic report could be resolved by simple medical intervention, 44.3% of the cases were stated to be not resolvable by simple medical intervention. The rate with no comment is 21.3%. (Figure 5).

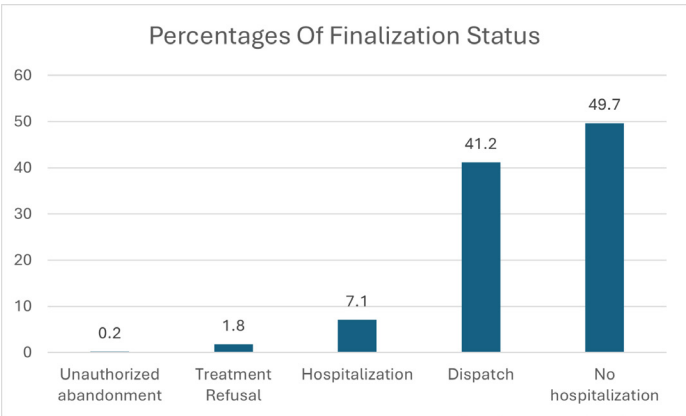


Figure 4. Finalization of cases

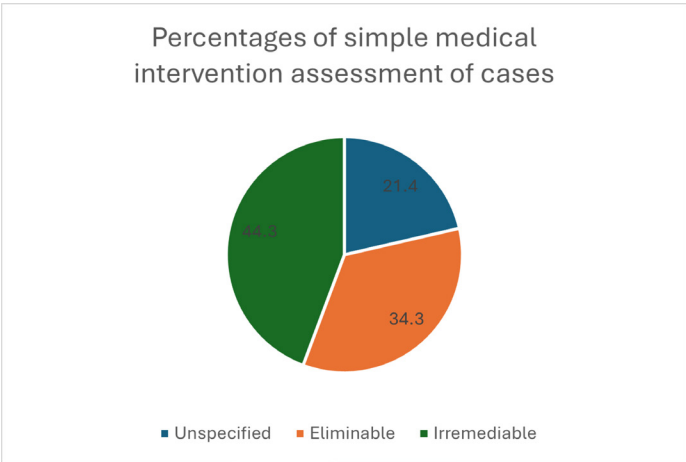


Figure 5. Results of simple medical intervention assessment of cases

When the life-threatening status of the applicants is analyzed, most of the cases were not life-threatening (53.1%). 19.4% of the applicants did not have any life-threatening status (Figure 6).

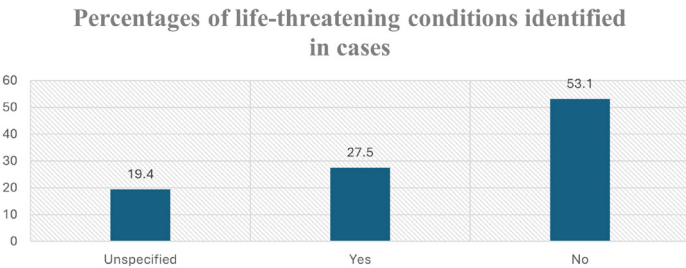


Figure 6. Life-threatening conditions stated in cases

When we re-evaluated the life-threatening situation, it was seen that the report of 74.3% of the cases was appropriate to be prepared according to the life-threatening criteria. The proportion of cases with a life-threatening condition but no life-threatening condition was 1.2%, and the proportion of cases with a life-threatening condition but no life-threatening condition was 6.3%. The rate of cases in which the life-threatening situation was not specified but was present was 9.4%, while the rate of cases in which the life-threatening situation was not specified but was absent was 25.7%. (Figure 7).

It was observed that 69% of the reports were finalized as provisional reports, while 2.3% of the cases were neither final nor provisional (Figure 8).

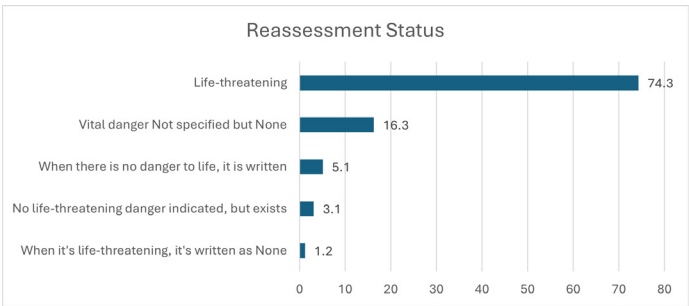


Figure 7. of specified life hazards

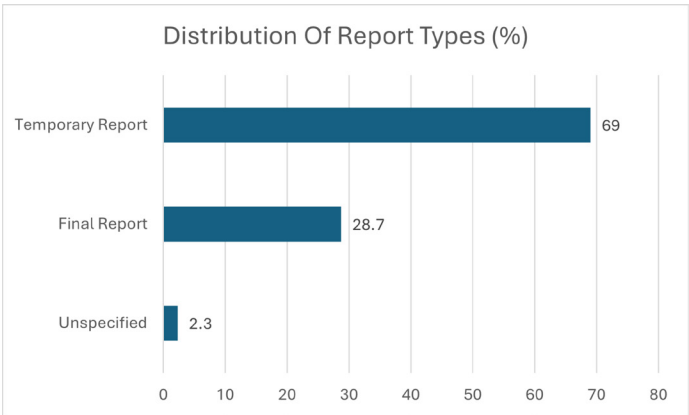


Figure 8. Finalization of case reports

Discussion

Emergency departments are the busiest departments of hospitals with the fastest patient circulation. When forensic cases are encountered, it is the physician's responsibility to report the situation to the judicial authorities and to prepare a forensic report about the incident. While emergency physicians perform diagnosis and examinations for the patients admitted, they also prepare forensic reports in addition to the diagnosis and treatment of forensic cases. Generally, emergency departments are the place where forensic cases are primarily admitted [6]. Patient density and stress in emergency departments cause physicians to prepare incomplete or inaccurate forensic reports. In addition, the fact that emergency physicians work on call 24 hours a day increases these errors [7]. When reports are incomplete or erroneous, the incident is not only a medical problem but also affects the judicial proceedings [8]. In our study, 70.6% of forensic cases were male. In the study by Çetin et al. 76.1% were male [9]. This is consistent with the literature. The mean age of the applicants was 37.33 years. According to the data, the highest application rate with 22.3% was observed in the 20-30 age range. The fact that this age group is in active business life increases their exposure to forensic cases such as work accidents. In addition, with more participation in social life, they may encounter forensic incidents such as fights and assault. It was thought that factors such as risky driving may

lead to emergency department visits after traffic accidents. With the occurrence of various stresses, it is thought that this age group may be admitted to emergency services with poisoning [10]. Incidents occurring in pediatric age groups can usually be found in situations such as home accidents, falling during play or falling from a height. The child's predisposition to physical activity and low safety knowledge increase the risk of such accidents. Elderly individuals are often exposed to household accidents such as falls and aspiration. Decreased physical abilities and balance problems increase the risk of accidents in elderly individuals and forensic cases in case of suspicion. It is thought that each age group has its own risks for forensic cases and these risks can be effective in reducing the risks of forensic cases with appropriate social policies, prevention, education and support programs.

In our study, the highest number of applications was observed in the summer months (37.9%). Fall and spring applications were 24.7% and 21.4%, respectively, and the lowest percentage of applications was 16.0% in winter. It is thought that traffic accidents and forensic cases increased as a result of increased social activities, increased alcohol use and risky driving in the summer months. In winter, it is thought that forensic cases decreased with the increase in spending time at home and the decrease in outdoor activities. For the increase in the summer months, first of all, personnel planning and separate space planning for forensic cases can be made so that the load increasing with the increase in normal cases in the emergency department does not increase even more with forensic cases. Forensic cases can be processed faster and the density of patients and their relatives in the emergency department can be reduced.

When we analyze forensic cases seasonally, the highest number of occupational accidents (18.7%) was observed in the spring season. This can be explained by the increase in agricultural activities before summer in a province like Balıkesir where both agriculture and industry are present. In other seasons, the highest number of forensic cases in emergency room visits were traffic accidents. In studies conducted in our country, it is seen that the largest group of forensic cases admitted to emergency departments belong to traffic accidents [11]. The increase in forensic cases may be explained by the increase in travel in summer and worsening weather conditions in winter. With the widespread implementation of measures and awareness raising to prevent traffic accidents throughout the country, accidents will decrease and forensic cases will decrease. In order to reduce occupational accidents, awareness about occupational safety will be raised through training courses to be opened and the number of cases will decrease.

When the injury sites of the cases were analyzed, it was observed that the most common injury was to the head-neck-facial region. Head and neck injuries were also seen most frequently in the study by Çetin et al [9]. In the study by Seviner et al. it was reported that extremities were most frequently injured [6]. It is

an expected situation as there is an injury site that may occur in all types of forensic cases. Cases will decrease if different measures are taken for each age group. It is thought that emergency physicians who are afraid of the medical problems that may occur in head, neck and face injuries avoid concluding forensic cases in district hospitals and interpret the cases as life-threatening and refer them to higher centers with the report that they cannot be resolved with simple medical intervention.

Almost half of the applicants (49.7%) were discharged after the examination. The patients who came to us from an external center constitute 41.2% of the total forensic cases. It is thought that the lack of imaging such as ultrasound and tomography in the external center or the lack of specialist physicians caused the cases to be referred due to life-threatening conditions.

In 44.3% of forensic cases, it was stated that treatment could not be organized with simple treatment intervention. It may be thought that patients refrained from giving a definitive report due to the need for additional consultation and the lack of knowledge of the emergency physician. The rate that simple medical intervention was not specified in the report was 21.4%. Deficiencies and errors in the first reports issued in the emergency department may have irreversible consequences. Significant mistakes can be made when making decisions about life-threatening injury or recoverable/non-recoverable with simple medical intervention [12]. Determining whether the cases encountered in the emergency department are legally significant is of critical importance from both medical and legal perspectives. Especially in cases of violence, accidents, poisoning or suicide attempts, not initiating or delaying the legal process may lead to loss of evidence and disruption of legal procedures. In such cases, it is very important to quickly recognize the legal dimension of the incident and report it to the relevant authorities in a timely manner. In addition, forensic reports are essential documents for legal processes. However, incomplete, inaccurate or insufficient information in these reports can jeopardize the rights of both patients and healthcare professionals. Therefore, it is very important to prepare reports meticulously and to document the medical findings and the history of the incident in detail.

In our study, more than half of the cases (53.1%) were reported as not life-threatening, and the rate without life-threatening information was 19.4%. Information about life-threatening conditions must be included in the reports. When the life-threatening situations were re-evaluated, it was seen that 74.3% of the reports were stated as appropriate. The proportion written as absent when there is a life-threatening situation and present when there is not 6.4%. In their study, Çoltu et al. reported that 6.5% of life-threatening decisions were made incorrectly. In another similar study, this rate was found to be 4.7%. In our country, emergency physicians are hesitant and uneasy in the process of writing forensic reports due to inadequate pre- and post-graduate forensic medicine education and insufficient knowledge of forensic medicine subjects [1]. With the trainings to be organized for appropriate report writing, physicians will

make life-threatening interpretations in accordance with the patient's clinic, and the judicial authorities will be shown that they are not correct.

Provisional reports were issued in most of the cases (69%). This was found to be consistent with the literature [13]. However, this is a common problem in forensic reports. As a result of issuing a provisional report when a final report should have been issued, the work and procedures to be performed about the case increase and this creates unnecessary labor loss [4]. Emergency physicians often think that they are protecting themselves by writing a provisional forensic report. This situation brings along unnecessary forensic investigations and prolongation of the process [14]. In the study of Çetin et al. most of the reports issued in the emergency department were organized as "definitive reports", which is different from our study [9].

Conclusion

We need to show sufficient care in the forensic reports to be prepared in emergency services. The reports should include information on life-threatening and simple medical intervention.

In order to write complete and error-free forensic reports, we should increase the time allocated to pre-graduation forensic medicine education, continue post-graduation education continuously, and regularly remind our physicians of their responsibilities in forensic cases. As physicians, we should be aware of our duties and responsibilities in this regard and strive to keep our knowledge about forensic reports and the relevant legal legislation up-to-date and at a high level.

The patient density of the emergency department and the pressure of the law enforcement officers accompanying the forensic case on the emergency physician performing the evaluation cause physicians to act hastily in the evaluation of forensic cases, thus causing the physician to be inadequate in the examination and opinion evaluations of the forensic case, and creating areas in emergency departments where only forensic cases are evaluated can eliminate this inadequacy.

Limitations

Our limitation was that our study was conducted in a single hospital and in a retrospective manner.

Conflict of Interests

The authors declare that there is no conflict of interest in the study.

Financial Disclosure

The authors declare that they have received no financial support for the study.

Ethical Approval

The study has been approved by the Non-Interventional Research Ethics Committee of Balıkesir University Health Sciences, with decision number 2023/158 dated November 1. 2023.

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