First Aid Knowledge of University Students in Poisoning Cases

Üniversite Öğrencilerinin Zehirlenme Vakalarındaki İlkyardım Bilgileri

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SUMMARY

Objectives

Poisoning is a crucial public health problem which needs serious approach and response to treatment. In case of poisoning, proper first aid is lifesaving and application should be applied in every condition. This research was conducted in order to evaluate first aid knowledge of university students for poisoning.

Methods

The research was conducted between the dates of May 2013 -June 2013 with the permission gained from the University Rectorship. The cohort of the research contained 4,560 students who received education in Istanbul. The sample of the study included 936 students who accepted to participate in the research and attended the school during the research. The data were collected by using a questionnaire form, which had 21 questions prepared by researchers. Analysis of the data was carried out with a percentage evaluation method and chi square tests in a computer environment.

Results

In our study, 92.6% of students (n=867) knew the phone number of the ambulance in case of emergency. In addition, 57.3% of students (n=536) knew the phone number of the poison hotline, and it was seen that they answered correctly the questions regarding the relation between body system and indications of poisoning. It was determined that the students who received education in medical departments answered the questions correctly more than the students who had education in other departments. ($p<0.001$, $p<0.01$).

Conclusions

It was observed that the university students in medical departments had more first aid knowledge on poisoning cases compared to the students in other departments who did not have sufficient information regarding these issues. It is thought that first aid education in all departments of universities, both poisoning and other first aid issues, should be conveyed to all students.

Key words: First aid; poisoning; university student.

ÖZET

Amaç

Zehirlenmeler ciddi yaklaşım gerektiren ve tedaviye iyi yanıt veren önemli bir halk sağlığı problemidir. Zehirlenme durumlarında uygun ilk yardım hayat kurtarıcı olup, toplumun bütün bireylerinin, her türlü koşulda yapması gereken bir uygulamalar bütünüdür. Bu araştırma, üniversite öğrencilerinin zehirlenme vakalarındaki ilkyardım bilgilerini incelemek amacı ile yapıldı.

Gereç ve Yöntem

Araştırma Mayıs 2013–Haziran 2013 tarihleri arasında, özel bir vakıf üniversitesinde, üniversite rektörlüğünden gerekli izin alınarak gerçekleştirildi. Evrenini üniversitede okuyan 4560 öğrenci, örneklemi ise çalışmanın yapıldığı günlerde okula devam eden ve araştırmaya katılmayı kabul eden 936 öğrenci oluşturdu. Veriler araştırmacılar tarafından hazırlanan 21 soruluk anket formu kullanılarak toplandı. Verilerin analizi bilgisayar ortamında yüzdelik değerlendirme yöntemi ve ki-kare testi kullanılarak yapıldı.

Bulgular

Çalışmamızda öğrencilerin %92.6'sının (n=867) acil durumda aranması gereken ambulans numarasını ve %57.3'ünün (n=536) zehir danışma hattı numarasını bildikleri ve zehirlenmelerde ortaya çıkan belirtiler ile vücut sistemleri arasındaki ilişkiyi soran sorulara doğru olarak cevap verdikleri belirlendi. Sağlık bölümlerinde okuyan öğrencilerin zehirlenme belirtileri ve sindirim ile solunum yolu zehirlenmelerinde yapılacak olan ilkyardım girişimleri ile ilgili bilgi sorularına diğer bölümlerde okuyan öğrencilere göre daha fazla doğru cevap verdikleri saptandı ($p<0.001$, $p<0.01$).

Sonuç

Sağlıkla ilgili bölümlerde okuyan üniversite öğrencilerinin zehirlenmelerle ilgili ilkyardım konusunda daha bilgili oldukları, diğer bölümlerde okuyan öğrencilerin ise bu konularla ilgili bilgilerinin yetersiz olduğu görülmektedir. Üniversitelerin tüm bölümlerinde ilk yardım derslerinin okutulmaya başlanması ile gerek zehirlenmeler gerekse diğer ilkyardım bilgilerinin bireylere doğru bir şekilde aktarılacağı ve toplumdaki ilkyardım bilgisinin artacağı düşünülmektedir.

Anahtar sözcükler: *İlkyardım; üniversite öğrencisi; zehirlenme.*

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Introduction

Poisoning is a clinical state that occurs as a result of the human body being exposed to toxic substance(s). Exposure can include respiration, circulation, ingestion, or skin contact. Poisoning is defined with various indicators that arise in the digestive, respiration, and nervous systems and adhere to the factor causing it.[1] It is possible that poisoning occurs as a result of different factors. Acute poisoning which is often seen in the emergency services generally develops from consuming spoiled foods, animal bites, and in attempts of suicide. In addition, chronic poisoning can come from the accumulation of chemicals within air, water, and foods within human body in the course of time.[2]

The factors that contribute to poisoning differ in regard to geographical region, seasons, level of development, age group, and level of socio-cultural status.[3] In developing countries where agricultural activities are dominant, poisoning caused by insects and pesticides is more common. However, in developed countries poisoning from suicide is observed at a higher rate.[2,4,5,6] By carrying out the general evaluation, pathogens that cause poisoning predominantly get into the body through the digestive system. Chemical substances that are used at home or in the garden, such as toadstools, spoiled foods, medicine, and excessive alcohol use can cause the poisoning to occur through the digestive system.[2,7]

Early intervention is crucial for an effective treatment of acute poisoning. As in all emergency cases, every lost moment would be a disadvantage for the patient according to poisoning facts. To prevent the delays, the support can be received from "The National Poisoning Information Center," which provides service 7 days and 24 hours. Detrimental effects can be prevented by the use early decontamination attempts and proper antidotes.[8] Therefore, community-residing persons should have basic information about first-aid to the prevent and minimize unnecessary deaths. First-aid courses are provided at schools and driving courses in our country. However, there are not enough studies to reveal whether proper first-aid awareness has been developed in the society.

This study was conducted to evaluate the information of university students regarding poisoning cases. The students' knowledge was determined based on first-aid applications in which the university students were involved in the poisoning cases. This study helped to determine which subjects were needed to increase student awareness on first aid and proper poison training.

Table 1. Introductory characteristic of students (n=936)

Characteristic	n	%
Gender		
Female	634	67.7
Male	302	32.3
Department		
Medical department	481	51.4
Other departments of the university	455	48.6
Grade		
1st Grade	269	28.7
2nd Grade	265	28.3
3rd Grade	255	27.2
4th Grade	147	15.7
With family	585	62.5
Living in where/with whom		
Alone	77	8.2
In dorm	132	14.1
With friend	142	15.2

Materials and Methods

The research was conducted between the dates of May 2013 – June 2013 at a private university. The permission was received through a related institution before the research. All undergraduate students who received education in the 2012-2013 academic year were consented for the research. The data were collected by using a questionnaire form that included 21 questions prepared by researchers with the help of related literature. The first part of the questionnaire form included questions about demographical characteristics (age, gender, department, grade, and environment). The second part of the questionnarie form focused on the subject of first-aid. In this department, questions related to first-aid education before encountering poisoning cases, the number of poisoning hotline, information regarding poisoning indications, and knowledge of the right first-aid attempts in case of poisoning were highlighted. The questions about first-aid knowledge were prepared as multiple choice and included 4 options. The questionnaire form was given to students at a date that was previously determined by the researchers. Analysis of the data was performed with a percentage evaluation method and chi-square tests using "SPSS for Windows 10.0" program.

Results

It was determined that 4,560 undergraduate students received education within the time period when the research was conducted. However, owing to the fact that the students did not stay at the school due to different reasons (application,

Table 2. Distribution of number to call in case of poisoning, poisoning indication, and first aid attempts (n=936)

Questions about poisoning	Answer	n	%
Status of Having First aid Education	Yes	394	42.1
Knowing Related Phone Numbers			
In case of emergency, what is the phone number for ambulance?	Correct	867	92.6
What is the phone number of poisoning hotline?	Correct	536	57.3
Poisoning Indications			
Which system disfunction do the indications such as Loss of consciousness, convulsion, sense of sickness, inconsistency of motion seen on poisoning cases show?	Correct	507	54.2
Which ways do toxic substances such as insect sting and animal bites poison?	Correct	869	92.8
Which way was the patient who has complaints of nausea, vomitting, diarrhea poisoned?	Correct	804	85.9
What kind of poisoning has indications such as empurpling of lips and labored breathing?	Correct	698	74.6
Do you have information regarding first aid provided in poisoning?	Yes	457	48.8
First-aid Attempts			
How should first aid in poisoning by the way of digestive system be?	Correct	223	23.8
How should first aid in poisoning by the way of respiratory tract be?	Correct	735	78.5
How should first aid in necton stinging be?	Correct	340	36.3
How should first aid in scorpion and snake stinging be?	Correct	159	17.0
Status of encountering poisoning before	Yes	269	28.7
Season when poisoning occured* (n=269)	Summer	110	40.9
Which way did poisoning occur?* (n=269)	Digestive	224	83.6

* Answers of people answered "Yes" only

training period, etc.), the research was conducted with 936 students receiving education and who were accepted to participate in the study at that time. Introductory characteristics of students who participated into the study were declared in Table 1. Moreover, the distribution of given answers to the questions regarding poisoning was shown in Table 2.

Students who were receiving education at health departments had more correct answers than the students who were studying at other departments (respectively $p<0.001$, $p<0.01$) for the questions which analyzed the relationship between indications and ways of poisoning and body systems. Of the students who answered correctly about first-aid attempt in the case of digestive and respiration poisoning, it was determined that the number of the students who were studying at medical departments were more than the number of students at other departments ($p<0.001$). Furthermore, it was observed that students who knew the phone number of the poison hotline were mostly studying at health departments ($p<0.001$) (Table 3).

When the number of students who knew digestive system indications and the first–aid attempts required for poisoning through the digestive system were compared, it was shown that the number of students that received first-aid education was significantly different than number of students who

Table 3. Comparison of answers to poisoning indications and first-aid attempts according to university departments (n=936)

Poisoning indications and first-aid attempts	Medical department (n=481) Correct	Other departments (n=455) Correct of universities	p
Poisoning indications			
Which system dysfunction do the indications such as Loss of consciousness convulsion, sense of sickness, inconsistency of motion seen on poisoning cases show?	306	201	<0.001
Which ways do toxic substances such as insect sting and animal bites poison?	457	412	<0.01
Which way was the patient who has complaints of nausea, vomiting, diarrhea poisoned?	434	370	<0.001
What kind of poisoning has indications such as empurpling of lips and labored breathing?	392	306	<0.001
First-aid attempts			
How should the first-aid on poisoning via digestive system be provided?	161	62	<0.001
How should first aid in poisoning by the way of respiratory tract be?	405	330	<0.001
How should first aid for insect stinging be administered?	188	152	p>0.05
How should first aid in scorpion and snake stinging be administered?	83	76	p>0.05
Which is the phone number of poisoning hotline?	385	209	<0.001

did not receive first-aid education (p<0.05) (Table 4).

Discussion

Poisoning is an important community health problem, which constitutes an important portion of emergency service applications. It requires a serious approach with truthful answers to first-aid applications which are done properly and on time. At the present time, the success of the treatment can be increased by enhancing awareness and protective measures regarding the issue. In the case of poisoning, proper first-aid is lifesaving, and it is an application which should be provided by all individuals regardless of medical studies. [7,9,10]

In our research, it was observed that 92.6% of the students answered correctly to the phone number for the ambulance service in case of emergency. This pleasing result showed that the Ministry of Health 112 ambulance service was well-known and adopted in our country. Ministry of Health may be the reason that the number of 112 ambulance stations was increased, easily reachable, more satisfactory, and well-known in our country. It can also be said that the number of individuals who received first-aid education may play a role. [11] It is a known reality that the press has the power of influence regarding that.[12] Another reason of this result can be that 112 ambulances were seen on the news of accident and injury events by the participants.

It was determined that most of the students answered correctly to the question of the relation between indications observed for poisoning and the body system (Table 2). It is crucial to know indications that give clues about of the kind of poisoning and convey the information to the medical per-

Table 4. Poisoning Indications and comparison of first-aid attempts answers with status of receiving education (n=936)

Poisoning indications and first-aid attempts	Students who received first-aid education* (n=394) Correct	Students who did not receive first-aid education (n=542) Correct	p
Poisoning indications			
Which system dysfunction does the indications such as Loss of consciousness, convulsion, sense of sickness, inconsistency of motion seen on poisoning cases show?	216	291	>0.05
Which ways do toxic substances such as insect sting and animal bites poison?	369	500	>0.05
Which way was the patient who has complaints of nausea, vomiting, diarrhea poisoned?	352	452	<0.05
What kind of poisoning has indications such as empurpling of lips and labored breathing?	301	397	>0.05
First-aid Attempts			
How should the first-aid on poisoning via digestive system be provided?	108	115	<0.05
How should first aid in poisoning by the way of respiratory tract be?	318	417	>0.05
How should first aid in insect stinging be?	149	191	>0.05
How should first aid in scorpion and snake stinging be?	70	89	>0.05

*First-aid education was received as course, driving-course and lesson

sonnel for the success of the first-aid and treatment at the hospital.

It was determined that the students did not know the first-aid attempts regarding poisoning via digestive system (Table 2), and it was also demonstrated that they chose vomiting as an initial method of choice. In the literature, the vomiting method for poisoning via digestive system is debatable, and our research showed parallelism with other researchers in regard to this important issue.[13,14,15] In our study, we determined that most of the students did not know the proper first-aid efforts for treating poisoning caused by an animal sting (Table 2). Dereli and colleagues determined that the least known first-aid subject was animal bites and insect stings.[16] In addition, Dinçer et al. drew attention to the study on pre-school educators, which showed that most of the educators performed the application wrongly for the first-aid for insect bites and stings.[17] It can be reasoned that animal bites and insect stings are rarely seen in our country.

In our study, it was determined that poisoning cases were seen by students in the summer time (40.9 %), and most of them occurred through ingestion (Table 2). In the literature, there are studies conducted in Turkey that show poisoning cases mostly occurred in summer time and most of them were caused by ingestion.[18-23] The finding of poison

rates are higher in the summer time seems related to the increased temperatures and foods that are easily spoiled in those temperatures. However, a lot of poisoning cases caused ingestion were seen by students, and they could not answer correctly regarding the first-aid applications.

In the study, it was observed that the students who were receiving education at medical departments partially knew, and the students who were studying at other departments did not have sufficient knowledge regarding poisoning indications and first-aid efforts (Table 3). This result is dependent on medical departments and medical units that have a first-aid course. Özçelikay and colleagues determined that students who did not take the first-aid course at the university did not have enough knowledge about first-aid in the study conducted.[24] The study which was conducted by Savaşer determined that first aid information points of medical personnel except doctors were higher than high school teachers had and it shows parallelism with our study.[25] In our study, 80% of medical students knew the phone number of the Poison Hotline. However, only 46% of students at other departments knew the number (Table3).

The significant difference for first-aid knowledge regarding only the digestive system was determined between students who received first-aid education and students did not receive the education. However, although it is not statistically meaningful, the right answers of students who received education were above the expectation. On the other hand, the answers of students who did not receive education were under the expectation (Table 4). The reason for this state is believed to be associated with students who took first-aid courses from some institutes and foundations. However, it often falls short because these courses have not been continuous and updated.[26] Adding first-aid courses into curriculum of all university departments as an elective course, and inclining students to choose this course, would provide increased awareness about first-aid knowledge and skills.

Limitations

The results of the study are limited with the students of the university where the research was conducted. It cannot be generalized to all university students.

Conclusion

As a result of the study, it was determined that university students who were studying at medical departments had more knowledge regarding first-aid as compared to the students who were studying at other departments. We propose that adding first-aid courses to curriculum at universities can increase the students' knowledge on both poisoning and subjects that require first-aid.

Conflict Interest

The author(s) stated that there was no conflict of interest.

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