What Do Parents Know? A Survey on Pediatric First Aid Knowledge of 631 Parents in Turkey

Anne Babalar Ne Biliyor? Türkiye'de 631 Anne Babanın Pediatrik İlkyardım Bilgisi Üzerine Bir Çalışma

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ABSTRACT Objective: The aim of this study was to evaluate parents' knowledge on pediatric first aid practices. **Material and Methods:** The survey cohort comprised 631 parents who presented to the Ankara University Faculty of Medicine, Department of Pediatric Emergency Medicine. Parents were asked to fill out a questionnaire regarding their knowledge on stings and bites, burns and scalds, eye injuries, fractures and sprains, fever, head injuries, fainting, poisoning, dental emergencies, nosebleeds, seizures and skin wounds. The survey questions were prepared from first aid instructions published on a poster distributed by the American Academy of Pediatrics in 2000. **Results:** A total of 631 parents were surveyed. Their mean age was 30.6 (range 18-51 years), 62% of them were females, 68% had a primary or secondary school educational level, and 32% held higher education degrees. The weakest areas of knowledge were how to treat a child in a situation involving nosebleed, fainting and poisoning with caustic and corrosive substances. Only 27 (4.3%) had received previous formal training in first aid; the remaining 604 (95.7%) had not undertaken such a training. Those who had taken a course in first aid at least once within five years achieved significantly better results. A statistical to comparison between groups who had received previous formal training in first aid and who had not revealed that test z value was -6.165 and p value was significant ($p< 0.001$). Knowledge of specific guidelines ranged from 23.6 to 95.4%. There was no correlation between knowledge and age, gender or education of parents. **Conclusion:** First aid knowledge and participation in first aid courses in Turkey is low-insufficient or lacking in general. Public education and first aid courses should be made available in order to improve first aid education among adult laypersons.

Key Words: First aid; emergencies

ÖZET Amaç: Bu çalışmada çocuklarda ilk yardım uygulamaları konusunda anne-babaların bilgi düzeylerinin değerlendirilmesi amaçlanmıştır. **Gereç ve Yöntemler:** Bu kohort çalışma Ankara Üniversitesi Tıp Fakültesi Çocuk Sağlığı ve Hastalıkları Anabilim Dalı Acil Tıp Ünitesine başvuran 631 anne-babayı kapsamaktadır. Anne-babalardan kendi bilgileri dahilinde sokma ve ısırıklar, yanıklar ve haşlanmalar, göz yaralanmaları, kırık ve burkulmalar, ateş, kafa yaralanmaları, bayılma, zehirlenme, diş sağlığı ile ilgili acil durumlar, burun kanamaları, nöbetler ve cilt yaraları ile ilgili bir anket doldurmaları istendi. Çalışma soruları, 2000 yılında Amerika Pediyatri Akademisi tarafından hazırlanan ve poster olarak dağıtılan ilk yardım kılavuzu örnek alınarak hazırlanmıştır. **Bulgular:** Toplam 631 veli araştırıldı. Yaş ortalaması 30.6 (18-51 yaş arası) idi, %68'i kadın, %62'sinin eğitim düzeyi ilk veya orta derecedeydi; %32'si yüksek öğrenim görmüştü. Burun kanaması, bayılma ve kostik-korozif madde ile zehirlenme durumunda çocuğa nasıl girişimde bulunulacağı sorularına alınan yanıtlar en yetersiz bulundu. Sadece 27 birey (%4.3) daha önce ilk yardım konusunda resmi eğitim almıştı; diğer 604'ü (%95.7) bu tür eğitim almamıştı. Daha önce ilk yardım eğitimi alanların bilgi düzeyi daha iyi idi. Daha önce ilk yardım konusunda resmi eğitim alan ve almayan gruplar arasındaki karşılaştırmaya göre; istatistiksel test değeri $z= -6.165$ idi ve istatistiksel anlamlı değer $p< 0.001$ bulundu. Özgün kılavuz bilgisi 23.6-95.4% arasında değişiyordu. Annebabaların bilgi düzeyleri ile yaş, cinsiyet ve eğitim düzeyleri arasında uygunluk bulunmadı. **Sonuç:** Türkiye'de ilk yardım bilgisi ve ilk yardım kurslarına katılım oranı genel olarak yetersizdir. Sağlık personeli olmayan bireyler arasında ilk yardım eğitimini geliştirmek amacıyla genel eğitim ve ilk yardım dersleri yaygınlaştırılmalıdır.

Anahtar Kelimeler: İlk yardım; aciller

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American Academy of Pediatrics (AAP) publishes and distributes first aid material free-of-charge to instruct adult laypersons in basic first aid principles. The target population for this public education campaign includes all caregivers of infants, children and young adults who are at the highest risk for common emergencies including bites and stings, nosebleeds, poison exposure, fractures and sprains, fever, head injuries, burns and scalds, skin wounds, eye injuries, dental emergencies, fainting and seizures. In 2000, AAP distributed a first aid poster with instructions to care for children with the above injuries to various health care providers throughout the United States for office and waiting room display. However, such a manual on the care of ill or traumatized children has not yet been published or distributed to clinics in Turkey. Limited research is available to improve awareness of first aid principles among the general public.[1,2] Until now, we could not find any studies on parental knowledge of basic first aid principles in Turkey. We believe that studies are necessary on first aid knowledge and attitudes of parents, as well as educational programs on this issue.

MATERIAL AND METHODS

STUDY DESIGN

This is a descriptive survey report conducted to determine parental knowledge of first aid management of ill or injured children according to the 2000 AAP guidelines. Ankara University Faculty of Medicine ethics committee approved the questionnaire and study protocol. Written informed consents were provided by all participants.

PARTICIPANTS

Participants were selected from parents who presented to Ankara University Faculty of Medicine, Department of Pediatric Emergency Medicine. Only one adult from each family filled out a questionnaire after the child was examined or stabilized. Those who have a profession related to health care were excluded from the study. Every participant was inquired about the attendance to a first aid or life support course and the time of attendance.

SETTING

The study was conducted in a urban emergency department of a tertiary care university hospital.

OUTCOME MEASURES

Patient demographics and study data were collected using standardized data collection forms. The demographic data included gender, age and level of education. Participants were asked 37 questions to assess their knowledge level of basic first aid principles. The survey questions were prepared from first aid instructions published on a poster distributed by the AAP in 2000.[3] The questionnaire invited yes/no responses and multiple choice items. Responses were coded as "correct" or "incorrect" for analysis. The "no idea" option was included in the "incorrect" category. Questions were straightforward and language was kept simple so that any adult with basic education would comprehend the questions and provide an answer. There was no time limit to complete the questionnaire.

DATA ANALYSIS

Data processing and the analyses were conducted using SPSS. Descriptive statistics were shown as median (minimum-maximum) for proportions of correct answers and number of cases, and percents were provided for nominal data. The difference in proportions of correct answers to the questions between groups who had received previous formal training in first aid and who had not received such a training was evaluated by Mann Whitney U test; a P value less than 0.05 was considered statistically significant.

RESULTS

Six hundred thirty one parents comprising the study sample were surveyed. The mean age of participants was 30.6, 62% of them were females, and 32% had received at least high school education. Only 27 parents (4.3%) had received formal training in first aid as a compulsory part of driver licensing or at the workplace (industrial company, etc.). Those who had taken a course in first aid during the previous year achieved significantly better results. Of those who had attended first aid training, median value of correct answers to the questions was 77.5% (range: 57.8-91.2%) while the rate decreased to 61.9%

(range: 44.4-80.5%) in those who had not got such training. A statistical comparison between groups who had received previous first aid training and who had not revealed z= -6,165 and p< 0.001. Participants lacked the knowledge regarding the need to sit down and apply pressure to stop a nose bleed (76.4% thought that laying a person with nose bleed on his back was beneficial). Similarly, only 25.9% of the participants were aware of the need to lay an unconscious person on his back with his head turned to one side. Most of them were not aware of avoiding vomiting in a person who had ingested caustic or corrosive substances was beneficial (70.7% thought that it was always beneficial to make a person vomit the poison). Knowledge of specific guidelines ranged from 23.6 to 95.4%. The level of knowledge was not correlated to age, gender or education of parents. The findings are summarized in Table 1.

TABLE 1: Study questions and percentage of correct answers "Yes, I know".

Sting of bee must be removed immediately	323 (51.2%)
Bee stings must be avoided of warm compresses	329 (52.1%)
Medical care must be sought after bee stings	480 (76.06%)
Ticks must be removed properly	600 (95.08%)
Medical care must be sought after tick removal	602 (95.4%)
Mammalian bites must be washed and must be medical care	286 (45.3%)
Ice must be used to treat burns	398 (63.1%)
Burn blisters must be left intact	441 (69.9%)
Power must be disconnected and medical care must be sought after electrical burns	471 (74.6%)
Burn victims must be covered with a clean sheet	359 (56.9%)
Eyes splashed with chemicals must be flushed and medical care must be	409 (64.8%)
Medical care must be sought for foreign bodies in the eye	453 (71.8%)
Movement of someone with a back/neck injury must be avoided	430 (68.1%)
For painful deformed areas a splint must be applied	433 (68.6%)
Open fractures must be covered and medical care must be sought	409 (64.8%)
For a cold injured extremity medical care must be sought	432 (68.5%)
For toxic febrile child physician must be called	597 (94.6%)
Aspirin must be avoided in kids with fever	416 (65.9%)
Correct knowledge of antipyretic drugs must be given to kids with fever	541 (85.7%)
An unconscious person must be laid on his back with head turned to one side	163 (25.9%)
Bleeding must be stopped and cuts must be treated with antibiotic pomade	432 (68.5%)
Sharp objects musn't be removed from stab wounds	373 (59.1%)
For heavily bleeding cuts pressure must be applied and must be called 112 (emergency line)	490 (77.7%)
Cuts and scrapes must be covered to keep moist, don't let them to dry	258 (40.9%)
Air exposure delays healing	244 (38.7%)
Find and rinse avulsed permanent teeth and seek medical care	387 (61.3%)
Someone with seizures must be protected	326 (51.7%)
Bandages must be changed daily	468 (74.2%)
When you change a bandage for a cut, you must be reapply antibiotic pomade	448 (71.1%)
For bruises cold compress must be applied	414 (65.6%)
A splinter must be removed and antiseptic must be applied	488 (77.3%)
For a retained splint medical care must be sought	440 (69.7%)
For a head injury with loss of consciousness, headache and oozing of blood medical care must be sought	526 (83.5%)
For cases of an unconscious head injury, 112 must be called	510 (80.8%)
Don't let a poisoned person to vomit in necessary cases.	185 (29.3%)
Chemical exposures must be washed and poison control must be called	465 (73.7%)
For nose bleed, the child must sit up and pressure must be applied	149 (23.6%)

DISCUSSION

There is little prior research regarding first aid knowledge of the general population. Additionally, there are no similar studies evaluating the level of first aid knowledge among parents in Turkey. The present results show that parents have lack of knowledge in pediatric first aid principles, as well as the steps to take in an emergency. A study on first aid knowledge among the general Scottish population indicated that such knowledge was generally deficient, with only 13% of respondents were able to correctly treat all pediatric emergencies described.[2] A study that was conducted on Australian mothers showed that approximately three-quarters of the mothers correctly answered 70% of the questions. Although higher education and previous training in first aid were shown to be associated with better results, the effects were small.[1] A similar study on industrial workers in Greece found that first aid knowledge was generally deficient. Previous first aid training was the only factor that had a statistically significant effect on performance scores, but this was borderline.[4] According to a USA survey on 654 parents presenting to an emergency department in 2002, subjects especially lacked knowledge about the need to rapidly remove all bee stings (36% awareness), keep wounds moist and covered (79% felt that drying wounds was beneficial), the need to cover victims of large burns (43% awareness), and the need to seek medical attention after tick bites (47% awareness).[3] In addition to the fields where a lack of first aid knowledge was cited in the USA study, our study showed lack of knowledge on other life-threatening emergencies such as poisoning or seizures. Unlike USA study, awareness of proper tick removal methods and the consecutive need for seeking medical care was rather high. Our study found significant differences between first aid trained and untrained participants. Although attending a formal first aid course is a factor for improving first aid knowledge, the rate first aid and CPR certification is very low in Turkey. Rasmus and Czekajlo report that 75% of the general population in Poland has received training courses on cardiopulmonary resuscitation.[5] A recent New Zealand telephone survey reported that 74% of the population had previously been trained in first aid.[6] Other researchers limit it to 12% of the general population.[7] In our study, only 27 (4.3%) participants had received previous formal training in first aid; the remaining 604 (95.7%) had not undertaken such a training. Another finding was that participation in a first aid course significantly improved knowledge ($z = -6.165$ and $p < 0.001$) in our population. Although only 27 (4.3%) parents in this study had a formal training in first aid, most parents (67.2%) reported that they treated minor injuries, fever and minor accidents while taking care of a child. The critical point here is the effectivity of first aid and whether it was performed timely.

In this study, the most important motivating factor was the positive influence of different educational campaigns about combating Crimean-Congo Hemorrhagic Fever (CCHF) in increasing the level of awareness in the population. The recent increase in the number of death cases in Turkey due to CCHF has triggered media attention, television and internet campaigns, and free-of-charge information posters were sent to hospitals by the Ministry of Health in order to raise people's awareness of CCHF.

As parents lack essential knowledge and preparedness to provide first aid to ill or injured children in our population, it is important to improve knowledge of first aid practices in adults as well as adolescents, especially those who care for children and infants. We believe that a variety of educational programs are needed to enhance awareness on pediatric first aid knowledge. A major step is the planning of education programs, and the way to direct them to public evidence suggests that costly, theoretically effective educational interventions are not always successful, less expensive training schemes may be used to educate the public on first aid principles. Additionally, simple measures such as a brief television clip or multimedia campaign can improve first aid knowledge.[8] For example, compulsory first aid courses may be incorporated into high school curriculum, and information may be offered to students and teachers in the form of

posters or videos at schools, and to the public in the form of TV programs. Campaigns with a similar effect may also be initiated. Further studies are required to raise awareness of the existing situation and to determine which adult training efforts make a signifant impact on knowledge of first aid principles in Turkey.

We acknowledge the limitation of our study regarding reliable generalization of results to the all parents in Turkey. Our study was conducted in a tertiary care university hospital in an urban area. It is likely that parents in rural areas would have either similar or lower levels of knowledge on pediatric first aid. While knowledge of first aid is no guarantee that one will behave appropriately in a pediatric emergency; experience from other countries indicates that formal training improves parental awareness of the correct way to respond.

CONCLUSION

First aid knowledge and the rate of participation to first aid courses in Turkey is low-insuffient or lacking in general. Public courses and educational campaigns should be made available and widespread in order to change the perspective of out-hospital pediatric emergencies in Turkey.

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