

## Güvenlik Güçlerinde Sosyal Medya Kullanımı: Bingöl Emniyet Müdürlüğü Örneği

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### ÖZET

*Bu çalışma Bingöl Emniyet Müdürlüğü'nün sosyal medya kullanımına karşı davranışı, sosyal medyanın polisin itibarına etkisi, polis-halk ilişkileri, ve sosyal medyanın nasıl daha etkili olabileceği konularını araştırmaktadır. Bu amaç doğrultusunda, çalışmada Bingöl Emniyet Müdürlüğü'nün değişik birimlerinde sosyal medya araçlarını kullanan 18 personel ile odak grup mülakatı yapılmıştır. Çalışma sonuçlarına göre; polis birimlerinde sosyal medya kullanımının yeni bir olgu olduğu ancak sosyal medyanın kullanımının polisin güvenilirliğine olumlu anlamda katkı sağladığı, polis-halk ilişkilerini olumlu etkilediği ve arttırdığı, bunun yanında polis birimlerinde sosyal medya kullanımının polis teşkilatlarının içlerindeki iletişimi de arttırdığı bulguları elde edilmiştir. Ancak diğer taraftan istenmeyen sonuçların ortaya çıkmasının engellenebilmesi içinde iyi bir şekilde kontrol edilmesi gerekmektedir. Bütün bunlara ek olarak da polis teşkilatlarının sosyal medyadan maksimum faydayı elde edebilmeleri için mülakatta ortaya çıkan tavsiyelere yer verilmiştir.*

*Anahtar Kelimeler: Polisin sosyal medyayı kullanması, sosyal medya, Bingöl polisi*

## Social Media Use In Law Enforcements: A Study Of Bingol Police Department

**ABSTRACT** *This study aims to explore Bingol Police's attitudes towards use of social media, social media's impact on the reputation of the police, police-public relations, and how social media can be used more effectively. For this purpose this study employed focus group interview with 18 personnel of the Bingol City's Police Department who are use social media tools. According to results; use of social media in the police department is so new phenomena but use of social media positively contributes to the police credibility, use of social media increases the police-public relationship, besides use of social media in police department increases the communication within the police department; however, it should be controlled to prevent unintended results. Addition to these findings, results indicates advises to get most benefits from social media.*

**Key Words:** *Police use of social media, Bingol police, social media*

## 1. INTRODUCTION

We live in information age where social media is one of the most important and complex types of new technology. Social media is a new tool for interaction between people and organizations and it has changed the communication between organizations, communities, and individuals. This new media are changing the way that information is passed across societies and around the world. It allows people to transmit unfiltered data or images to anywhere in the world. Individuals can use social networking to mobilize groups in support of a specific issue without exposing themselves to any risks. The rapid spread of social media tools and new media-sharing technologies changing the conditions in which the police departments use. In response, government institutions and police departments can do little to efficiently stop it (Mayfield, 2011: 79). Police organizations can get benefits from using social media too. Police agencies around the world, like other type of organizations, are using social media for many purposes. In Turkey, the police just started using social media to disseminate information to the public. According to Turkish National Police (TNP) official web page, twenty-nine city police departments use their official social media tools, particularly Facebook and Twitter. Bingol Police is one of the police departments effectively use social media in the TNP.

This study aims to reveal Bingol Police's attitudes towards use of social media, social media's impact on the reputation of the police, police-public relations, and how social media can be used more effectively. Main focus of this study is the appropriation of social media platforms by police. Besides, the study also exposes positive and negative side of using these tools. For this purpose, we interviewed with police officers who is responsible of directing social media tools in their individual branches in Bingol Police Department. This study initially begins with an overview of social media tools, particularly Facebook and Twitter summarizes related works into social media usage by police departments on community engagement. The study follows this with an overview of methods that is used to analyze the results collected during the interviews. Finally, the study outlines the benefits of using social media for the police departments.

## 2. RELATED WORK

Regarding the social media use of police in community policing, departments try to reduce fear of crime, improve social order, and develop good relationship between police and citizens (Lieberman, Koetzle,&Sakiyama, 2013). In order to achieve this goal, police officers engage with the public via social media tools. Social media is being used in a wide range by police departments. Crump (2011) divided using social media in policing into four areas.

- Using social media for intelligence
- Using social media as a source of real-time information
- Using social media for protecting the public from harm on the internet
- Using social media for knowledge sharing within policing organizations

Although many police forces use social media in their communication strategies, there has been much less academic analysis of the police use of social media as a knowledge sharing and citizen engagement (Lee, 2011). An exception is a study by Altunbas (2013) into the use by police in Dallas-Fort Worth area of Facebook and Twitter tools as a means of:

- Crime prevention tips
- Surveillance videos
- The Most Wanted List
- Missing Persons
- Traffic tips
- Latest news from the local police
- Result from cases
- Safety-Security Tips
- Police-community related posts (Altunbas, 2013:110)

In addition to widespread social media usage, Altunbas mentioned the reasons using social media for police agencies:

- To reach the younger generation
- A fast and easy way to communicate with the public
- Two way communication between citizens and police
- To build trust with and to earn respect from the public
- To use the wisdom of the crowd
- A large part of the community already uses social media (Altunbas, 2013: 107)

Gordon Scobie, Deputy Chief Constable of Tayside Police, mentioned in an interview in November 2010 that “if we don’t engage with people via social media they will move on without us and we will miss the opportunity to influence them” (NPIA 2010). Similarly, Leicestershire Constabulary advises that:“Good use of social media can help the police to better understand, respond to and attract the attention of specific audiences. Used in the right way by the organization, social media enables real two-way communication with people interested in engaging with the police.”(NPIA 2010).

Lieberman, Koetzle and Sakiyama (2013) provide adequate information on how departments are using social media sites by conducting a content analysis of messages posted by the 23 largest U.S police departments using Facebook over a 3-month period. According to study results, departments posting crime related messages rather than community policing and communication messages.

Mergel (2013) insists that use of social media in public sector has increased citizens' engagement, transparency and collaboration. In addition to these benefits, this article provides a framework for measuring social media impact social media users who follow public sectors' tools (Mergel, 2013: 327). As a result, the more public sector engage on use of social media, the more people will suppose real-time information sharing with government (Mergel, 2013: 333).

Meijer and Thaens (2013) focused on social media strategies on police departments in their studies. According to study, police departments have three different social media strategies:

- Push strategy: Social media are used as one-way information sharing with community and not to obtain information from them (Mergel, 2010).
- Push and pull strategy: Social Media are used as two-way communication to provide followers with information but also to obtain specific information from followers (Meijer and Thaens, 2013)
- Networking strategy: Social media are used to build interaction between individual police officers and citizens (Mergel, 2010).

In addition, Mergel, Mugar, and Jarrahi (2012) state that at the organizational level it is essential "to understand the impact of organizational norms, policies, strategies and practices that shape adoption strategies" (p 152). They also emphasize the importance a social media strategy to implement social media practices into organizations.

By the way, many organizations do not know how to create effective social media policies, therefore, instead of effective social media usage, these organizations prohibit using social media tools or they restrict their access (Chi, 2011).

These examples from the literature shows previous studies revealing that police departments use social media for many different purposes mainly to inform community and collect information from the community. Similarly this paper is studying Bingol Police Department's use of social media and trying to identify whether use of social media tools by the police department has any differences or similarities from the other examples. This will help executives of police departments to identify new policies about the use of social media in the police department to achieve a better fight with crime and a better management in the department also a better understanding of the community in which it is serving.

### **3. METHODOLOGY**

This study utilizes focus group method to be able to understand how Bingol police department uses social media. Focus group is a form of qualitative research, it helps researcher learn more about group or community opinions and needs. In this method a group of people are asked about their attitudes, feelings, experiences, beliefs, perceptions, reactions and opinions towards a service, concept, product, advertisement, or idea in a way in which would not be feasible using other methods. This method is an interactive group setting in which participants talk with other group members freely based on topics that are supplied by the researcher (Morgan 1997: 12). Interviewer should ensure that participants have a particular knowledge and experience or opinion about the topic that is being investigated (Merton & Kendall; 1946). For this nature focus groups allow interviewers to study people in a more natural conversation pattern than typically occurs in a one-to-one interview (Powell et al,1996; 499).

A focus group enables the researcher to gain a larger amount of information and acquiring feedback regarding various topics in a shorter period of time (Morgan,&Kreuger, 1993). In marketing, focus groups are used to understand potential market acceptance of the product so it can help concept development and organization can create an overall direction for marketing initiative. All these advantages and practical uses make focus group appropriate for this study. Because social media is a new tool for police departments and altitudes, feelings, beliefs, experiences, reactions, perceptions, and opinions towards social media can be understand using focus group. Besides that it has advantage of being low cost compared to surveys, as one can get results relatively quickly (Goss, &Leinbach, 1996).

In this study focus group interview has been carried out with 18 personnel from different units of Bingol Police Department who are experts on use of social media in their units. Participants were asked 12 open-ended questions which were derived from the literature review to be able to understand social media's impact on the reputation of the police, police-public relations, and how social media can be used more effectively.

### **4. FINDINGS**

Results of the focus group interview were noted and analyzed. Participants' responses and other assessments are presented below.

*How long have the participants been using the social media?*

Participants perceive mostly Facebook when social media is mentioned. Rates of the social media use of the participants are varied. Two of them have used the social media for 3-4 years; six of them have used it for 4-5 years; nine of them have used it 5-6 years; one of them have used it 6-7 years. Participants use the social media based on their acceptance of technology. Most of them reported that they have started using the Facebook since the establishment of it. Participants generally use the Facebook to communicate with their friends and relatives.

Interview results show that; IT personnel have followed the social media for a long time and they are able to use the social media extensively and effectively. However, this expression is acceptable for only IT personnel; it cannot be generalized for all of the employees of the Bingol Police Department. On the other hand, the existences of the IT personnel who have used social media for a long time positively affect the social media use.

*How long have the participants been using the social media tools of the Bingol Police Department?*

Bingol Police Department has two social media tools that are the Twitter and Facebook accounts of the department. Bingol Police Department's Twitter account was opened on July 4, 2013. Its Facebook account opened on June 24, 2013. 14 out of 18 participants express that they have followed Bingol Police's Twitter and Facebook pages in less than a year. These participants emphasized that they opened their account to follow the Twitter account of the Bingol Police. One participant has followed the social media tools of Bingol Police Department more than one year.

Three participants have followed the social media tools of Bingol Police Department more than two years. Thus, social media tools of Bingol Police Department have played an encouraging role in accepting technology and using the Internet.

Although participants have used different variations of social media for many years, they have begun to use social media tools of Bingol Police Department recently. Participants are the best users of social media in their units; and it is the matter to be examined why they have just started using the Bingol Police social media. Its personnel have used social media tools of Bingol Police Department lately and more effective use is needed time.

*How often does Bingol Police use the social media tools?*

According to results, two participants look at to social media two times a day; three participants check their social media tools accounts three times a day; six participants go through the Internet to check their accounts more than three times a day. In addition, four participants mentioned that they continually monitor the Internet because of their job description, while three participants did not specify a frequency. 13 participants did not make a distinction among social media tools in answering the question, but five of the participants stated that they used Twitter much less than Facebook, as stated a few times a week. Participants mentioned that they follow the Twitter because their superiors advise them to do it; therefore, they perceive "following the Twitter" as a task. According to the results, frequency of the use of the participants is enough to grasp the developments in the social media.

#### **4.1. The Most Used Social Media Tool**

When asking to the participants if they have used their ranking by frequency of use of social media tools, 12 participants have chosen Facebook as the first tool and Twitter as the second place. Five participants stated that they use in turn Facebook, Twitter and Whatsapp. One of the participants has put the tools in order as Facebook, Whatsapp, and Twitter. P1 indicated that the Facebook is more established and well-known tool than other social media tools;

thus, it is ranked as first place. In addition, since Bingol Police Department does not use Whatsapp as a social media tool to communicate people, all of the participants use Facebook and Twitter while only six participants use Whatsapp.

According to interviews, participants prefer to use the Facebook as first place because they are used to apply it for personal goals and specific jobs. However, they perceive the Twitter as more work-related tool such and hardly use it. What is important here that providing a motivator factor to use social media tools. As far as the Facebook is concerned, personal contacts between colleagues bring enough motivation to employ. Conversely, the Twitter is mostly used for work-related issues, and then it does not offer motivation as much as the Facebook does.

#### **4.2. Time Spent for Social Media**

Eight of the participants spend less than one hour of to track social media while three participants spend one to two hours a day for the use of social media. Two participants spend two to three hours a day to follow social media. Four participants spend three to four hours a day on social media use. One participant spends more than four hours to follow the social media. The participants who spend more than two hours a day on social media mentioned that they have to follow the social media because of their job description.

Participants typically spend one hour or less on the social media. This can be seen sufficient for usual personnel in her daily routine. However, participants are the personnel whose jobs are related to the social media, then one hour usage is seen inadequate time for them.

#### **4.3. Use of Smart Phone**

Since social media and the Internet are used through smart phones in today, whether you have a smart phone plays a decisive role in the density of the social media use. In this study, 15 participants use smart phones while three participants do not use it. Participants who have smart phones stated that they followed the social media through their phones, particularly during working hours.

Widespread use of smart phones has a positive impact on the following of social media. Thus, personnel commonly use the social media both for personal goals and issues related to business. However, some participants do not have smart phones, and they do use the social media as regularly as their colleagues do, who have smart phones. Accordingly, having a smart phone is an important factor to follow the social media. 10 out of 15 participants said that they used to have a smart phone less than a year; four participants have a smart phone two to three years; one participant has a smart phone three to four years. Consequently, more than fifty percent of the participants have started using a smart phone recently. Using smart phones make it easy to use social media and increase the usage.

#### **4.4. Impact of the Social Media on the Police Credibility**

14 out of the participants stated that Bingol Police's social media activity, coincided with the solution process, has increased the prestige of the police and has contributed to the solution

process. P3 expressed that social media activities expanded domain of the police in social life but the police has been late to begin these kinds of activities.

P11 highlighted that effectiveness of the social media activities were depends on increasing the number of followers. Four participants had different approaches about whether the social media activities increased the police's credibility. For example, P12 mentioned that number of the people who used the social media is an important issue in Bingol to assess the effects of the social media on the credibility of the police. P17 did not have any idea about the issue because he has not been working in a unit related to the public. According to the findings, the use of social media positively contributes to the police credibility. The contributions to the duty of the police in a positive way are seen. It is vitally important to access a wider audience and create better relations with the people.

#### **4.5. Impact of the Social Media on the Relation Between Police and Public**

11 out of the participants think that social media activities positively contribute to the Bingol Police's public relations. P2 express that the social media is a good instrument to communicate with young people. P4 mentions that social activities and events of police to engage with the community and its own personnel are shared so much that these activities encouragingly affect the community-policing strategies of the Bingol Police. P13 states that the Facebook is a more effective tool than the Twitter in sharing the activities organized by the Bingol Police.

By citing the low rate of the Internet usage in the city and the small number of the Bingol Police followers, seven participants claim that social media activities of the Bingol Police do not have a positive impact on the public relations. For example, K6 says that the number of the people who liked our page is so small number for Bingol Police. Similarly, P1 emphasizes that the number of the followers is almost the number of police officers in the police department, people who follow these social media is not enough to make a positive effect in the city. Likewise, P8 think that number of people who use the Internet in Bingol is not sufficient; thus, the Internet is not an applicable tool to reach people. It is understood from the findings that the widespread use of social media contributes to the public relations, but increasing the use of social media and number of the followers is a necessity. The limited number of the followers and low rate are seen as the biggest obstacle in reaching more people.

#### **4.6. Impact of the Social Media on the Communication within Bingol Police**

14 participants stresses that the use of social media tools affects Bingol Police's perceptions on communication. P8 and P9 say that the activities about the Internet has increased so much of our use of social media and information sharing that everybody can have information on what is happening around. In addition, P10 and P13 think that the use of the social media is necessary and it makes communication faster. Similarly, P1 mentions that after start using social media, our communication style has changed and we have started obey the etiquettes about social media. On the other hand, P2 and four respondents think differently and express that almost everything is shared on the Twitter; for example, my wife can learn activities of police department before me; I think it is an excessive sharing. It can be seen that



the social media has a positive impact on direct and fast communication. However, uncontrolled direct exchange of information may lead to some certain problems such as information pollution.

#### **4.7. The Topic Advised to Share on the Social Media**

According to the participants, community policing activities, traffic services, smuggling, statistics about crimes and criminals, and social projects and activities are shared on the social media tools of the Bingol Police. Most of the participants think that the use of social media tools contributes to the prestige of Bingol Police, has developed public relations and has made the communication within the police fast, widespread and effective. However, some participants find monotonous and repetitive the form of sharing and they express that the style is far from attractiveness. They come up with some recommendations to get rid of the monotony and to make more engaging participants to the social media tools

- Mobese images from accidents should be shared in an attractive format.
- Education sessions can be shared in an engaging format.
- Shared photos can be taken more professionally.
- Articles can be published related to Preventing of the crimes.
- Information about rental houses in the district can be passed between officers.
- Practical information, such as how to understand the real honey, can be shared daily.
- Families of police officers can share useful information.
- Seasonal local views of Bingol can be shared.
- Topics that attract attention of youth such as application issues for Police Schools and sports news can be shared.
- Document needed to obtain passport and driving license can be shared.
- Units can share more information related to their areas. For example, counterterrorism department can share information for preventing radicalization. Similarly, precautions to prevent drug addiction, theft, and fraud can be shared by related units.
- Only one of our districts contributes to information sharing via social media. However, others should join to information sharing activities.

Social media is used to inform both personnel and public about safety and security services provided by police. On the other hand, so many things should be done in order to contribute to the general police services throughout country. In addition, the current service is far from being interesting for people and personnel. It is obvious that a more effective way

and different applications should be used as well as efforts are needed to reach more followers.

#### **4.8. Other Assessments of the Participants on Social Media**

The majority of the participants think that social media is an important tool for police in sharing information with public; especially, after the events of Gezi Parkı in 2013 the importance of social media has been deeply noticed.

According to the participants, Bingol Police should work on increasing the number of the follower to reach more people and utilize more effectively social media tools. P2 propose that every officer should recommend the Bingol Police social media tools to their friends and acquaintances in order to increase the number of followers. P6 and P7 advice that every opportunity should be used to increasing the number of followers. Similarly, P14 emphasize the importance of increasing the number of followers to be able to spread activities of police more quickly to a wider population. Our current social media usage improves with baby steps, but it should grow rapidly. We can get help from social media experts to increase the number of followers. Correspondingly, K17 mentions, “Unless our tweeter accounts develop, the number of the followers of our media tools cannot increase, so we need time.” Some participants express that people who live in Bingol does not usually use the Internet; thus, other tools should be tried to reach people. For instance, K11 mentions that only young people can use social media tools such as Twitter and Facebook; however, police should interact with other people. Building information desk at the town center can be useful to inform people about traffic, passport and other services provided by the police. Similarly, K5 emphasizes that there are some people we cannot reach via social media. We use other tools such as opening a Bureau at the downtown.

## **5. CONCLUSION**

In this paper we analyzed social media usage, particularly Facebook and Twitter by Bingol Police and reactions by its followers. As a result, social media has a positive impact than a negative one. As we found, Facebook is the most visited platform among the participants and most of the participants generally visited our platforms every day. Prestige also has an essential effect because using social media creates a positive image for police within the community. Therefore, using social media tools help to increase a positive public image. Further, using social media significantly improved police-community relations and gave an opportunity to police to show the humanitarian face of policing besides the effective use of social media may have the potential to help the police better understand the environment in which it operates. Bingol Police also use social media as part of their internal communication. The participants think that social media can be a great tool for communication with employees in the workplace because it is not easy to connect them because of the 7/24 shift work schedule.

Results of this study show that effective use of social media is really important for police works and a better understanding of the environment, or better situational awareness about the community it is serving. Social media could provide awareness to any society also it can

provide a good indicator of prevailing feelings and emerging issues in a society. To be aware of this situation social media provide better, more agile, and more credible public information to the police executives. If police department do not fully understand these tools, they may miss their important effect on the nature of future problems.

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## **Introduction**

Turkey, by virtue of its geographic location, experiences one damaging earthquake almost every year. In fact, the number of earthquakes occurred in Turkey, within the last century, with magnitudes greater than  $M=5$ , is 122. Thus, the period of occurrence is virtually ten months, for a damaging earthquake in Turkey. This is the highest rate of occurrence in the world, in any country.

Over a period of one hundred years, a total of 98 000 people died, and about 550 000 buildings are heavily damaged, during the earthquakes in Turkey. Financially speaking, the direct losses to the economy of these earthquakes, on the average, have been approximately 500 million US dollars per year.

Unfortunately, the amount of research conducted in Turkey, in order to prevent these losses is not adequate. Perhaps, if only 5 per cent of these losses were spent for research in earthquake engineering, these losses would have been significantly reduced.

During the August 17, 1999 Kocaeli earthquake of  $M_w=7.4$  and also during the November 12, 1999 Bolu-Düzce earthquake of  $M_w=7.2$ , a total of 17 500 people died, 45 000 people wounded. Out of 854 000 residential units, 108 400 residential units either collapsed or damaged severely beyond repair, 105 000 suffered moderate damages and 117 000 suffered minor damages. There has been a great awareness in the public opinion towards the earthquakes and earthquake preparedness.

In fact, immediately after these two earthquakes, the Law No.4708, governing the rules and regulations for the supervision of building design and construction in Turkey, is enacted on June 29, 2001 by the Turkish Parliament, also a National Earthquake Council is established under the auspices of the Turkish Scientific and Technical Research Agency (*TUBITAK*), for the purpose of preparing national strategies in mitigation of earthquake hazard; and further all Provincial Governments and local municipal bodies organized very modern and sophisticated Disaster Coordination Centers, throughout the Country. There are however, yet a lot of things to do in this regard.

## **Education and Research**

In every country, the earthquakes and protective measures against earthquakes, also the ways and means of mitigation of earthquake hazards, should be studied at all levels of formal education, from elementary schools to Universities. It is also essential that necessary awareness education in earthquakes should be also given to children at pre-school age, and also to adults at post-school era. Administrators of schools, hospitals, private and public institutions also require courses, seminars and educational programs for the purpose of awareness of problems related to earthquakes and their hazards.

Since, only the civil engineers and architects are responsible for the proper and safe design of buildings, the aseismic design principles should be an integral and compulsory part of their undergraduate curricula. Unfortunately, in the Turkish universities, these Courses, if at all

available, are technical electives. The engineers and architects already in practice, should be given on the job training, in order to refresh their knowledge, as well as to furnish them with new technological ideas, rules, methods and standards. The professional associations in Turkey have been already engaged in these educational activities on regular basis. Earthquake engineering research is also important. The volume of experimental as well as theoretical research in earthquake engineering at universities should be increased by obtaining additional financial support from the private and public institutions.

The areas of earthquake related research are very versatile, encompassing a variety of fields, such as civil engineering, structural engineering, earthquake engineering, geotechnical engineering, geological and geophysical engineering, city planning, architecture, social sciences (*economy, administration, civil defence, insurance, financing, etc*). Pre-earthquake activities of research and any spending of resources for the mitigation of hazards, virtually reduce in multifold the possible losses to economy during the earthquakes.

## Methods

### Study websites

We searched the official websites concerning disaster education in Turkey are searched and reviewed the websites are reviewed according to the established protocol. Each website has been evaluated by two independent reviewers. The average scores were obtained by averaging the two scores. If the difference of any score concerning a specific category was more than 5 points, the third reviewer was invited to re-evaluate and re-score. The average would be the result of the two closest values.

1. Official website of Istanbul Technical University, [www.aym.itu.edu.tr](http://www.aym.itu.edu.tr)
2. Official website of Istanbul Aydin University, [www.aydin.edu.tr](http://www.aydin.edu.tr)
3. Official website of Bogazici University, [www.koeri.boun.edu.tr](http://www.koeri.boun.edu.tr)
4. Official website of Izzet Baysal University, [www.imidb.ibu.edu.tr](http://www.imidb.ibu.edu.tr)
5. Official website of Disaster and Emergency Management Presidency of Turkey, [www.afad.gov.tr](http://www.afad.gov.tr)
6. Official website of Istanbul Metropolitan Municipality, [www.ibb.gov.tr](http://www.ibb.gov.tr)

### Review protocol

E-learning should provide rapid correction and addition of teaching content; explorative learning; ubiquitous access, time and place independency; individual adaptation to foreknowledge of students; enrichment of traditional teaching modes by multimedia-based preparation of contents; and improved interaction possibilities compared to traditional distance learning media. It is explored that if the disaster education-related e-learning

websites in Turkey can provide such requirements. These categories are evaluated by three independent experts who gave the scores for each of the following categories (from 1 to 5).

**Table1.** Scores for web sites

	Categories	Scores (from 1 to 5)					
		Site 1	Site 2	Site 3	Site 4	Site 5	Site 6
1	Rapid updating of teaching content and material	5	4	5	5	4	4
2	Explorative learning	4	4	5	4	5	5
3	Independent time, place and access	5	5	5	5	5	5
4	Individual adaptation	5	5	5	5	5	5
5	Multimedia-based preparation	1	4	4	3	2	4
6	Interaction possibilities	1	1	1	1	1	1
7	Continued education tests	1	1	3	1	1	1
8	Certification	5	5	5	5	5	5
9	Post-test evaluation and grading	3	3	3	3	1	1
10	Multi-language approach	5	5	5	5	5	5

### Statistical analysis

Demographic data were analyzed by *t* test and chi-square test where appropriate. The comparative

results were presented as point estimate and interval estimate (eg, the difference of the proportions, means, and 95% confidence interval [CI] for difference). The  $\hat{\phi}$  statistic was used for calculating the degree of agreement in selecting high-risk ED discharged between the reviewers. All data were abstracted from records and keyed into and analyzed in Excel 2013(Microsoft Co., Redmond, WA, USA). A *P* value less than 0.05 was considered as statistically significant.

### Results

As mentioned in the section of method, we reviewed the available 6 websites by items in detail. Six websites were reviewed and discussed by three independent reviewers. As to rapid updating of teaching content and material, three of the websites (50%) were updated per week (5 points), and three (50%) were updated per two weeks (4 points). Three of the websites (50%) had good explorative learning (5 points), whereas the other 3 websites (50%) had average explorative learning (4 points). All of the websites (100%) had independent time, place and access (5 points) and individual adaptation (5 points). As to multimedia-based preparation, there were primary availabilities in 2 websites (33%; 4 points). There were no primary interaction possibilities in all websites (100%; 1 point), There was only one website (1/6, 17%) that has weak continued education tests (3 points), whereas the other 5 websites did not have such services (1 point). All of the websites (100%) had certification (5

point). 4 of the websites have weak post-test evaluation and grading services (66%, 3 points). 2 of the websites (%34, did not have this service (1 point). All of the websites (100%) had multi-language approach (including English and Turkish) (5 points).

## Discussion

This study demonstrated that there was still no satisfactory e-learning environment concerning disaster education in Turkey. Because of its popularity and generalization, disaster education should be incorporated into friendly e-learning websites immediately to provide good information and concepts to the public. In addition, the rating of the websites depends not only on the experts' opinions, but also on the rating from the students. The data is limited in that fact that it lacked student attitude in understanding of basic concepts and utilizing these learning sources. In general, the acceptance of a course was largely due to its congruence with principles of adult learning such as self pacing, reflective learning, and collaborative learning from peers.<sup>1</sup> It is necessary for the participants to note a number of advantages of online learning. Although there are only rare examples in the literature of online courses on communication skills for disaster professionals or students, <sup>2</sup> this study does add to the growing literature in disaster and in fields outside of disaster, <sup>3-5</sup> suggesting the effectiveness of Internet-based distance education. However, more rigid evaluations with control groups and a larger number of participants are required to establish which factors and participant characteristics are determinants of effective learning. Previous studies generally show that Internet-based instruction is at least as effective as conventional methods<sup>6-8</sup> and in some cases superior.<sup>9-11</sup> A recent meta-analysis of Web-based learning in disaster education, however, did acknowledge that studies are needed that better compare instructional methods rather than comparing instructional media although it still did not find this method superior to conventional methods.<sup>12</sup> A carefully-designed, instructed, and evaluated online course may effect better learning outcomes than face to face instruction.<sup>13</sup> Based on the limitations of research to date, it is clear that further work is needed to assess the impact and acceptance of small group online education, and the role of faculty or other moderators in online disaster education courses.<sup>9,14-16</sup> The acceptance of this method in a broader, unselected student population will be of interest. Evidence suggests that most learners will ultimately be successful online learners.<sup>17</sup>

However, there was consistency of findings from the mixed-method approach used to evaluate this course. Governments should focus on their role as sponsors of basic scientific and technological research, bridging the digital divide, fostering public-private partnerships, managing international cooperation efforts, and establishing the regulatory and incentive components. All stakeholders must work collaboratively to grapple with the many standardization and infrastructure development issues and the transnational and global e-learning aspects that must be addressed in a comprehensive manner. International aspects of e-learning services form a critical and urgent area still to be addressed by the World Trade Organization and regional trade blocks.

The public sector, the industry, and partnerships have the responsibility for assuming an active leadership role in educating the disaster community and in coordinating and



encouraging the effective implementation of relevant applications. Disaster organizations must be provided with information about the opportunities as well as the risks of e-learning solutions. Technology-evaluation sources and results must be made available and disaster managers must be guided in the difficult process of specifying systems, procuring, acquiring, and contracting for ICT products and services. Knowledge repositories must be established in cooperation with the industry, centers for technology evaluation, academic research groups, and centers of excellence.

Organizational and human-resources development through awareness programs, education of disaster staff, continuous training, and career opportunities must be institutionalized from the inception of the developmental effort. Transference of technical expertise and the appropriation of knowledge by disaster personnel are necessary for the full participation of endusers in the development process and the best insurance for successful implementations. Success in the deployment of institutional e-learning applications depends on the existence of staff with the right mix of skills in all functions and levels. Recommended strategies include:

1. A structured human-resource development program defined with the goal of increasing awareness of e-learning opportunities and training disaster professionals to assume a leadership role and actively participate in all aspects of systems design and implementation.
2. The training strategy will take into account issues associated with the development, the organizational environment in which systems are expected to operate, and the specific circumstances of the local disaster system. The following guidelines for training should be implemented, such as identifying target groups based on functions and training needs; developing training programs to meet identified target groups' needs; and establishing a network of training focal points, taking into account the specific organization and circumstances of national characteristics and local disaster unit requirements and undertakings.
3. Target groups to be considered are those who originate, collect and supply data; operational decision makers; managers, planners, and policy makers; information systems managers; information technology and computing specialists; data analysts; and statisticians and researchers.
4. Each country will develop its own strategy for initial and continuing training in disaster -information systems, considering the overall development of disaster information systems and its particular educational, research, and market environment.

The internet will radically change medical education. The next decade may see the emergence of a new type of disaster school. It will not be made of bricks and mortar, but based mostly in the hard drives of computers, accessible by thousands of students all over the world. New investment trends are driving this efficient, cheap, and convenient way of delivering information. E-learning potentially offers huge benefits for users. It includes self

paced courses, available anytime and anywhere, guaranteed consistency, personalized and relevant, easily updated, easy tracking and reporting, and reducing logistical costs (travel, space, materials). International recognition of training will also be assured since companies will demand international collaborations. This is because national systems will always be perceived as being of variable quality. U21 includes universities in Europe, China, North America, Australia, and New Zealand. Other universities, such as Oxford, are setting up their own international consortiums. It is a convenient medium for ongoing education, a necessity in the disaster field.<sup>19</sup>

There are other obstacles. Some estimates suggest that it takes 200 hours to produce one hour of online tuition, invoking the need for huge investment. Despite the current investor frenzy, online learning has not yet produced commercial success. The University College of Los Angeles school of dentistry spent \$750 000 (£535 000) over five years developing an online course to train periodontists. It has been a commercial failure. <sup>20</sup> So it seems that the correct business model has yet to be found. But with such large potential revenues from electronic education, it is only a matter of time before the right solution makes e-learning a reality. Clearly e-learning will not wholly replace teacher led or hands on training. Online scenarios may be used to gain confidence and appropriate background knowledge before the hands on portion of learning, replacing time spent learning theory, with more time mastering the skill.<sup>19</sup> Crucial supervised practice can then follow to gain essential on-site experience. Furthermore, certain areas lend themselves more easily to online teaching. Multimedia instruction is particularly well suited to help students.<sup>21</sup>

New models of disaster education will continue to emerge as the qualities and knowledge required by juniors is constantly reviewed. But there seems little doubt that electronic learning will be right at the centre of its future. However, this report demonstrated that the e-learning of disaster education was still primitive in countries. It should be the first priority to implement a sound e-learning environment to provide good disaster education information and education to promote the preparation of disaster response in the public in this country.

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