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The Effects of Social Networking on Disaster Communication Used by the Emergency Medical and Rescue Staff - The Case of the Van Earthquake

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Abstract

Objective: In this study, the effectiveness and usage of social networking services used by The Emergency Medical & Rescue Staff are discussed in the case of the Van earthquake.

Material and Methods: Emergency Medical & Rescue Staff working for the Ministry of Health in Republic of Turkey, who served in Van Earthquake Rescue Organization, has been determined as a universe. The questionnaires were prepared, sent, and applied via e-mail to the Emergency Medical & Rescue Staff, communicated by means of e-mail groups related to prehospital emergency care.

Results: In total, 66.5% of participants stated that they had made use of social networking services to get information about the disaster area before going there when they were assigned for duty for the case of the Van earthquake. Participants used social networking services mostly to communicate with their colleagues working at the place of the incident to get information about climate conditions, socio-cultural organisms, and magnitude of the damage in the earthquake area. Also, 69.4% of participants stated that they shared information over the social networking systems related to the disaster area after their duties ended there. The experiences they gained in the disaster area and the risks they faced were the most frequently shared information.

Conclusion: Social networking services have been used by The Emergency Medical & Rescue Staff widely and effectively in disaster communications. *(JAEM 2014; 13: 58-61)*

Key words: Disaster communications, emergency health care, social media, Van earthquake

Introduction

Social networks are online platforms used for fast communication where ideas, opinions, experiences, and perspectives are shared in addition to personal profiles. A significant advantage of social networks in disaster communication is that they are accessible via smart phones as well as computers and that they increase the speed of communication every day. The most commonly used social networks in Turkey are "Facebook" and "Twitter" (1).

In disaster management, the personnel that will make the first intervention need urgent information about the disaster area. They want to receive information about the current status at the disaster area as well as the risks. Most often, some information is transferred to the personnel via official and formal means of communication. However, the related people may want to access information by us-ing alternative communication channels as well. The most commonly used and fastest way to share information in our age is the internet. The effectiveness of social networks has been increasing in every area of human life in recent years, and the frequency of use of these networks by the relevant personnel and their effectiveness during disaster intervention come up as important questions that need to be answered (2, 3).

The Van earthquake occurred on October 23, 2011, and its magnitude was 7.2. While disaster intervention studies for the Van earthquake were ongoing, a second earthquake occurred on November 9, 2011; 604 people died in the first earthquake, whereas 40 people died in the second. The objective of this study is to evaluate at what frequency and for what purposes the increasingly popular social networks are used for disaster communication by the personnel taking part in the disaster intervention work (4).

Material and Methods

The population of the study was T.R. Ministry of Health personnel who worked as emergency health and rescue personnel during the Van earthquake. The total number of personnel who worked at the disaster region until 19.02.2012 was stated as 5902 by the T.R. Ministry of Health in reply to the letter of application dated 14.03.2012. In addition, it has been stated that personnel from 80 different cities also worked in the disaster region (5). Calls to participate in the study were sent to the health personnel who were determined as the population via e-mail groups for pre-hospital emergency maintenance. Survey forms were sent via e-mail to 315 people who accepted to participate in the study, and 170 replies were again received via e-mail. Personnel working in protective health services and health institutions at the disaster area were excluded from the study. The survey included 5 questions on descriptive data that were asked to the participants, whereas 4 questions were asked to determine the frequency and effectiveness with which they used social media during and after the Van earthquake task.

Statistical Analysis

The acquired data were analyzed via SPSS (Statistical Package for the Social Sciences Chicago, III, USA) 16.0 statistical software. Frequency distribution and percentages were used for data analysis.

Results

Participants from 42 different cities were contacted during the study. The age average of the participants was 28.54 (standard deviation: 7.066). The youngest participant was aged 20, and the oldest was aged 51. The career experience average of the participants was 6.27 years (standard deviation: 5.357). The participant with the least experience had an experience of 1 year, whereas the participant with the highest experience had an experience of 28 years. Information regarding the genders, career groups, social network membership status, and their task durations at the disaster area has been given in Table 1.

In total, 66.5% (n=113) of the participants indicated that they used social networks to acquire information after their task assignments were made and before they went to the region. Of these people, 61.1% (n=69) used social networks to contact and carry out coordination with their colleagues and other health vocation groups in the study area, whereas 56.6% (n=64) used social networks to gain information about weather conditions and social and cultural struc-

ture; 47.8% (n=54) to learn the damages after the disaster; 42.5% (n=48) to learn about the experiences of people working at the disaster area; and 27.7% (n=31) to learn about the risks in the disaster area (Table 2).

Of the participants, 64.7% (n=110) was able to access and effectively use social networks during the time they spent working at the disaster region; 69.4% of the participants indicated that they shared information in social networks about the disaster region after they completed their tasks (n=118). Of these people, 71.2% (n=84) stated that they shared their experiences with those who were going to work there after them, 64.4% (n=76) stated that they told those who will work after them about the risks at the disaster region, 61.9% (n=73) stated that they shared the current status and damage at the disaster region, 56.8% (n=67) stated that they shared information to

Table 1. Definitive information on participants

Variable	n	%
Gender		
Male	129	75.9
Female	41	24.1
Vocational Groups		
Emergency medical technician	65	38.2
Paramedic	42	24.7
Ambulance driver	18	10.6
Nurse	17	10.0
Doctor	14	8.2
Other*	14	8.2
Are you a member of any social network?		
Yes	164	96.5
No	6	3.5
Your task at the disaster region?		
Emergency medical personnel	125	73.5
Rescue personnel	45	26.5
Your period of work at the disaster region?		
1 Week	26	15.3
2 Weeks	106	62.4
1 Month and above	38	22.4

*Other vocational groups include those, such as anesthetics technicians, radiology technicians, psychiatrists, and pharmacists

Table 2. Reasons why participants consult social networks prior to going to their task area*

Variable	n	%
I consulted social networks in order to provide communication and coordination between my colleagues or other vocational groups working at the disaster region.	69	61.1
I reached local information about the disaster region (weather conditions, social and cultural structure, etc.) via social networks.	64	56.6
I consulted social networks to gain information about the current status and damage at the disaster region.	54	47.8
I consulted social networks to learn about the previous experiences of those working at the disaster region.	48	42.5
I consulted social networks in order to learn about the new risks (contagious diseases, secondary accidents, etc.) that occurred at the disaster region after the earthquake.	31	27.4

*The participants were informed that they can select more than one answer.

Table 3. Shares in social networks of participants after completing their tasks at the disaster region*

Variable	n	%
I shared my experiences and the information that I acquired for those who will go to the disaster region after me.	84	71.2
I told the risks to those who will go to the disaster region after me.	76	64.4
I shared information about the current status and damage.	73	61.9
I shared information to attract attention to the problems in disaster management.	67	56.8
I shared information about the aid material required in the disaster region and how to organize this material.	46	39.0
*The participants were informed that they can select more than one answer		

attract attention to the troubles in disaster management at the region, and 39.0% (n=46) stated that they shared information about disaster relief materials required at the region as well as the needs of organizations (Table 3).

Discussion

Today, social networks are frequently used in disaster management both for training and informing during the preparation stage and as part of the disaster communication during intervention work. The number of tweets sent during the Fukushima disaster in Japan in March 2011 reached 5000 in a second. One of the followers of a news anchor on a TV channel sent the addresses of his relatives who were trapped under the rubble during the October 2011 Van earthquake via Twitter, and the anchor was able to transfer this message to the search/rescue teams, saving the lives of 2 people (6, 7, 8).

A study carried out by the American Red Cross in 2011 has put forth that the social network participation ratio of the general population is 48.0% (9). The social network participation ratio of disaster health and rescue personnel was determined as 96.5% in this study. A study carried out by Williams and Pittman has put forth that during the August 2011 earthquake in the state of Virginia in the USA, the disaster aid personnel working in New York City used social networks to acquire information about the current status at the disaster region during the first few hours (10). Social networks are seen as important tools in disaster communication by both the general population and the disaster intervention personnel. Sutton et al. have carried out a study on the October 2007 South California forest fires sample event and have determined that the ratio of the local people who used social networks during the disaster was 10.0% (11). The ratio of personnel working at the disaster region who consulted social networks for information was determined to be 66.5%. The fact that the social network membership ratio and the use of social networks in disaster communication of emergency health and rescue personnel use are higher than those of the general public shows that social networks can be used effectively for disaster communication.

A study carried out by the Canada Virtual University has put forth the areas in which social networks can be used for disaster communication: evaluation of the current status and damage; attracting attention to problems in crisis management; sharing of expertise and experiences about rescue and intervention operations; and informing the intervention personnel about the disaster region (12). It is shown that social networks were used effectively during the Van earthquake example in all areas reflected in the literature. The fact that 64.7% of the participants had access to social networks during their time at the disaster region shows that social networks are important tools in the intervention process. When we consider that one of the important goals

of disaster communication is to ensure proper coordination among disaster intervention personnel as well as provide the adaptation of the personnel to the disaster region, the importance of social networks in disaster communication becomes even more striking (13).

The evaluation of the current status and damage as well as planning the aids that will be made is very important during the first few days of a disaster (14). It is observed that a significant portion of the participants in the study shared information on the current status at the disaster region as well as the aids that were required via social networks. Another topic that is important for disaster intervention personnel is being aware of additional risks they might face in the disaster region (15). The study carried out has put forth that intervention personnel consult social networks frequently to get information about the additional risks that might occur in the disaster region and share relevant information as well. Another area where communication should be used in disaster management is the sharing of the lessons learned as well as the successes and problems that occurred during the intervention. Disaster management is a form of process management where success can be attained via effective evaluation studies (16, 17). It was observed in the study that 71.2% of the participants shared via social networks the experiences they gained during their work at the disaster region, whereas 56.8% shared the problems that were faced.

Study Limitations
National Medical Rescue Team (UMKE) from the Ministry of Education was evaluated during the study as the rescue personnel, and rescue teams from the Presidency Emergency and Disaster Management Department as well as from non-governmental organizations were not evaluated. Hence, the study results cannot be generalized for all rescue teams.

Conclusion

Emergency health and rescue personnel use social networks frequently and effectively in order to provide coordination and harmony at the disaster region as well as to evaluate the current status, define the risks, and share the experience acquired during disaster management.

Ethics Committee Approval: Due to the nature of this study, ethics committee approval is waived.

Informed Consent: Written informed consent was obtained from emergency medical personnels who participated in this study.

Peer-review: Externally peer-reviewed.

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