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Knowledge, Attitude and Practice of Emergency 115 system's Operating Personnel in Triage System and Its Effective Factors

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Abstract: Triage system is necessary and critical for facilitating urgent distinguishing critically injured and ill patients from patients who have chronic and non-emergent complaints. Thus knowledge and attitude of operating personnel of triage system both can improve their performance and increase the system's effectiveness and efficiency. Therefore, the major aim of this study is investigating knowledge, attitude, and practice of emergency 115 system's operating personnel in triage system and identifying effective factors. Findings show that most personnel fully believe in effectiveness of triage in 115 emergency system, however, the major information of personnel about triage and its implementation is experimental. In addition, findings show that 50% of the individuals had formal triage certificate, while none had optimal academic preparation. In other words, not only formal triage education is seriously pursued for 115 system personnel, but content retraining in triage is not desirable and acceptable.

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1. Introduction

Natural and unnatural crises are inevitable in the world, what is important is readiness for dealing with crisis which is directly related to the crisis subsequences and can minimize them. Our country is in the top list of occurrence of natural and unnatural crises so that there probability for occurrence of over 31 types of crises in Iran. Manmade disasters have also high rate of victims in this country and have had considerable economic and social damages. Road accidents, plane crashes, constructional debris, fires, industrial accidents are among accidents which are faced daily. Traffic accident is one of the man made crises with high rate of occurrence in Iran which accounts for high volume of damages and losses annually. Unfortunately it also has led to considerable human losses. Some statistics related to car and driving accidents show that annually over 20 million individuals are killed or seriously injured by traffic accidents. 50% of mortality rate goes to young and active population of the community (15-44). In terms of economic matter, mortality due to accidents and their related injuries incur 65 million dollars cost for the developing countries annually. 56% of the mortality cases in the country's roads are related to traffic accidents. 50% of the injured individuals die at the moment of the accident, 22% die within delivering to the hospital and 28% die in the hospital. Various accidents in the country annually lead to death and mental and physical disability of thousands of people as well as significant financial losses. Also, much mental stresses and financial pressures are experienced by the relatives of the patients and injured people in the accidents which are sometimes irreversible (Jalali, 2006). Finding high risk patients in due time and carrying out necessary medical actions for them are among objectives of field triage (Rezaee, 1994). Triage system, which in public sense means such a system used by medical or emergency personnel in crisis with the major goal as determining medical priorities and therapeutic actions to maximize the number of survivors, now has gained its own academic and legal status according to formal internal regulations in most countries of the world and all public and private organizations have been matched to it. In unexpected accidents, triage is classified into three classes in terms of its location:

1. Triage in hospital emergency unit
2. Triage in field
3. Triage in hospital pre-operative holding

Standard triage is necessary to be done within a short time, about one minute for each patient and it should be implemented in emergency entrance or even before reception and accounting. In addition, triage should be implemented by the physician or nursing expert with at least 5 years of experience and all patients including surgery and internal ones should be triaged.

The main executives of the triage system are medical and emergency personnel. Regardless of lexical definition, proper understanding and application of triage concept is necessary in crisis and accident management and naturally the prerequisite for applying related concepts is awareness and knowledge about them. Adequate and appropriate knowledge of the triage is necessary for medical emergency personnel, which is research question in the current work. One of the most important effective factors in survival of collective accidents injured people is the type and the way of actions performed by medical emergency personnel.

Initial minutes after the accident are critical minutes; only if appropriate medical services are delivered in these important minutes, survival of the injured people can be hoped. Sometimes the distance between accident and the death lasts for only a few minutes with many ifs; such Ifs that could lengthen this distance in case of occurrence.

A significant number of injuries cannot lead to death. This difference can be taken from comparison of rates of mortality due to injuries in road accidents in different countries. For example, statistical review of the number of car accident injuries in Iran and Malaysia and its comparison with developed countries such as US, Japan, Canada etc shows that casualties in accidents in Malaysia and Iran is much lower, so that Iran is in 12th and Malaysia is in 14thpalce among 21 countries. While, U.S., Japan and Canada are at the first to third places, respectively. But in terms of number of deceased people due to accidents the statistics become completely reverse. That is, Iran is at the first place and Malaysia is at the second place among 21 countries in terms of deceased people in car accidents, while US is at the 7th, Japan is at the 22th and Canada is at the 15th place in this regards. It is here that importance of rescue and first aid and accident scene is evident.

2. Research Background

Dehnadi Moghadam et al. (2008) compared the number of triaged patients in three working courses. Data collection tool was Emergency Service Timing Workflow Form approved by Ministry of Health and Medical Education and based on triage criteria in normal conditions (excluding conditions of disaster). There was significant difference in average of patients at hospitalized level in night with morning and evening course, and between morning with evening and night course at out-patient level ($p < 0.05$). Maximum of hospitalized patients was 2,104 (40.30%) at night working time and maximum outpatient cases was 12,443 (48.21%) in the morning working time. There was significant difference in the average of triaged patients in night with evening and morning working time at emergency level ($p < 0.05$).

Husseini et al. (2008) studied timing workflow of patients in emergency unit and its effective factors. They found that average of the time between triage and physician visit and between physician visit to decision making and average of total time between triage and decision making is this center (trauma) is standard. Referral and request for tests and visit of surgery and neurological surgery services affected this time intervals.

Findings by Dadashzadeh et al. (2010) showed that majority of research sample didn't receive necessary education regarding triage functions. According to studies, experience and extensive training activities are prerequisites of triage implementation, thus necessary strategies for establishment of minimum standards in this field and retraining courses specific for triage for emergency personnel are recommended.

Methodology

In this descriptive – sectional (practical) study run in 2011, personnel were studied randomly given scattering of the research population. For data collection, a survey including 9 general items about personnel records, and employee position, formal certification triage status, beliefs, and attitudes and 18 items about knowledge and function of 115 emergency system's personnel regarding triage was developed.

Statistical population included 115 emergency system's personnel in provinces with highest rate of traffic accidents. 112 personnel were selected randomly and were asked to fill the survey. Data analysis was done using software SPSS.115 emergency personnel were divided into four groups: Physician - Specialist - Technician - Driver (trained). The way of answering to questions was compared among groups. The least average score for knowledge level was 0 and maximum knowledge was scored as 1 and total of scores was considered as 18 which showed total knowledge. Minimum score for attitude was negative (0%) and maximum positive score (100%) were considered. Study data were collected through the survey. Final scores for knowledge were classified as follows: poor (answering to 0-25% of items), average (answering to 25-50% of items), and good (answering to 50-75% of items).

3. Research Questions

1. How is stance of 115 emergency personnel concerning triage concept?
2. How is stance of 115 emergency personnel concerning triage effectiveness?
3. How is severity of stance of 115 emergency personnel concerning triage system (knowledge level)?

Table of Research Variables and Demographic data are shown in Tables 1 and 2.

Table 1: Research Variables

No.	Variable	Variable Type		Quantitative		Qualitative		Practical-academic Definition	Measurement Method	Scale
		Independent,	dependent	continuous	continuous	nominal	ranking			
1	Education level	•					•	According to the training hours	Viewing educational document	Relative
2	Degree of motivation		•				•	Based on a Likert scale	Questionnaire	Ranking
3	Age	•		•				Viewing insurance document in terms of the year	questionnaire with Viewing insurance document	Relative
4	Gender	•				•		Male or Female	Observational	Nominal
5	Education	•				•		According to the years of education	Asking the person	Relative
6	Instability	•		•				From Level to Level 2	Asking level of development	Relative
	Attitude		•				•	Based on a Likertscale	Questionnaire	Ranking
	Knowledge		•				•	Based on a Likert scale	Questionnaire	Ranking

Table 2: Demographic data

No.	Title	Physician	Specialist	Technician	Driver	Total	percentage
1	Number	5	47	57	3	112	
2	5-10 years of working experience	3	14	15	1	33	29.4%
3	10-15 years of working experience	1	18	18	2	39	34.8%
4	15- 20 years of working experience	0	7	10	0	17	15%
5	Over 20 years of working experience	1	8	14	0	23	20.5%
6	Do not know aim of triage	2	15	26	2	45	40%
7	Do not know major use of triage	2	20	32	2	56	50%
8	Do not believe in triage effectiveness	0	1	3	0	4	3.5%
9	Optimal answering to questions (over 75% answering to items)	0	0	1	0	1	0.1%
10	Average answering to questions (over 50-75% answering to items)	2	10	16	0	28	25%
11	Poor answering to questions (below 50% answering to items)	3	37	40	3	83	74%
12	Didn't have triage certificate	2	26	25	2	55	49%
13	Total of personnel answering to over 70% of items	29					26%
14	Personnel with triage certificate answering to over 50% of items	19					17%
15	Personnel with triage certificate answering to over 50% of items	19					17%
16	Percentage of personnel answering to over 50% of items without triage certificate	10					9%

4. Findings

Findings show that most personnel fully believe in effectiveness of triage in 115 emergency system, but they do not know the purpose and main use of triage. It may have negative impact on the motivation and effectiveness of the measures. Unfortunately, a large part of information and knowledge of personnel regarding triage and its implementation is experimental (given that half of the personnel do not have forma triage certificate). It is noteworthy that most personnel who do not have triage certificate are nurse which account for a large percentage of 115 emergency personnel. Unfortunately, optimal academic readiness for triage implementation is also low (only one person answered over 75% of items). In addition, a high percentage of personnel are in low academic readiness for implementing triage (14% of personnel answered below 50% of items). Percentage of people with formal triage certificate was 50%, however, none had optimal academic readiness. In other words, not only formal triage training is not seriously pursued, but also content retraining concerning triage is not acceptable and optimal (since only 65% of the personnel with triage certificate answered over 50% of items).

5. Recommendations

1. Issuing uniform triage protocols and instructions by national emergency center to emergency units throughout the country.
2. Providing, distributing and attaching pamphlets, posters, flowcharts, etc regarding triage system in emergency units throughout the country.
3. Holding educational and retraining programs regarding triage in all emergency units throughout the country.
4. Holding periodic and systematic tests about triage system and issuing valid certificate to eligible people.
5. Holding periodic triage maneuvers for increasing readiness and capability in emergency personnel.

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