Knowledge, attitude and practices of relief workers regarding first aid measures

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Abstract

Objective: To assess the knowledge, attitude and practices of relief workers posted in rescue and relief bases of the Red Crescent Society of Mazandaran province of Iran during Nouroz holidays.

Methods: Two hundred and nineteen relief workers were selected as the study sample from thirteen Norouz rescue and relief bases of Red Crescent Society in Mazandaran province, which has 13 cities, for this cross-sectional descriptive study. Through a cluster random sampling, a pre- tested, structured and validated questionnaire was used to assess knowledge and attitude of relief workers. A practical test with a check list was used to assess their practices. The data were analyzed by t test and analysis of variance.

Results: The relief workers had an average knowledge score of 56.5% and attitude score of 52.9% on first aid. There was significant difference between knowledge and education level (p<0.0001). Of the total relief workers, 83% knew how to correctly perform a Cardio pulmonary resuscitation (CPR), while 94 percent reported that they did not know how to perform endotracheal intubation.

Conclusion: Relief workers demonstrated moderate level of knowledge, attitude and practices towards first aid. Capacity building of relief workers on first aid will help to reduce morbidity and mortality, especially from traffic injuries.

Keywords: Road traffic injuries, Red Crescent, First aid (JPMA 62: 218; 2012).

Introduction

Road traffic injuries are a major threat to individuals and national health systems. Each year, road traffic injuries result in the death of more than five million people worldwide,[1-4] and over 90 percent of these deaths occur in low- and middle-income countries.[5,6] The world health statistics 2008 Report predicts that over the next 25 years, road traffic injuries will be one of the most rapidly growing public health concerns due to increased motor vehicle ownership in low- and middle-income countries.[7] Road safety knowledge and the avoidance of walking or cycling-related risk behaviours decrease road traffic injuries.[8]

Road traffic injuries are significant burden on the healthcare system in Iran.[9,10] In 2006, the mortality rate for road traffic injuries in Iran was 44 per 100,000 population. Morbidity and mortality related to road traffic accidents have been rising due to the increased number of non-standard cars and motorcycles, low gas prices, increased preference and use of private vehicles over public transportation, and lack of enforcement of road and vehicle safety laws.[9] Therefore, Iran has the world's highest death rate resulting from road traffic accidents. Accordingly, immediate steps are required to reduce morbidity and mortality of road traffic injuries to avoid/prevent the loss of life and resources of the public health system in Iran.

First aid provided on the spot is very crucial and at times life-saving. First aid training is offered by the Red Crescent Society of the Islamic Republic of Iran.[11,12] The national organisation includes important sections such as youth organisation, relief and rescue organization and medical procurement organisation. Relief and rescue organisation of the Red Crescent Society, as one of important sections for first aid training, in a study among drivers revealed that very few drivers could give first aid on the spot.[12,13]

Traffic mishaps and the resultout injuries are common during Norouz holidays. An effective option to reduce morbidity and mortality of road traffic injuries is guiding the travellers during the Norouz holidays and the main goal of the relief and rescue organisation is to provide relief services. Relief workers are taught to carry out first aid and basic life support.[14] Iranian Red Crescent Society Relief and Rescue workers managed 2118 relief and rescue cases. They rescued 7766 people out of 8074 until April 3, 2011 during Norouz holidays.[15]

The main objective of the study was to determine the knowledge, attitude and practices of relief workers in providing first aid. The hypothesis was that relief workers located in Norouz rescue and relief bases of the Red Crescent Society of Mazandaran province do not have sufficient knowledge in providing first aid and a few of them should have formal first aid training.

Methods

The descriptive cross-sectional study was carried out among relief workers located in Norouz rescue and relief based at the Red Crescent Society of Mazandaran province. Sample size based on estimated prevalence of satisfactory knowledge of relief workers regarding first aid in the year 2010-11, with a standard score of 95% was calculated to be 224. Our study selected 219 relief workers by a cluster random sampling procedure. The procedure was carefully explained to all the participating relief workers and written informed consent was individually obtained. Ethical approval for this study was obtained from the Red Crescent Society of the Iran Institute of Applied-Science and Technology.

The questionnaires were designed, pre-tested and standardised. The questionnaire consisted of three parts: profile evaluation of relief workers' knowledge, attitude and practices of first aid; demographic details of the subjects. like age, marital status, education level, the number of children, association with the relief operation, and history as a relief worker; knowledge of common first aid emergencies. For each relief worker the percentage of correct answers was evaluated as a representative of knowledge score. A score of at least 34% was considered as "Moderate" knowledge about first aid, a score of or below, 33% was considered as "Poor" and of or above 67% as "Good". Ten questions were asked to assess the attitude of relief workers toward the importance of first aid training and each answer was scored on a scale of 0.0 (unfavourable attitude) to 100 (favourable attitude). For each subject, the overall score was summed up and then converted into percentage to represent the attitude score. Practical test with a checklist was used for skills score on relief subjects. All analyses were performed with SPSS (version 16.0). Descriptive statistics were used to describe the mean scores and proportions. To examine the difference between knowledge and attitude and selected demographic variables were done using t test and analysis of variance. All analyses were performed using two-tailed hypothesis testing with level of significant set at 0.05.

Results

Of the 219 relief workers, all were males. The mean age of the study participants was 23±5 years. Study participants had a mean education of 14±2 years, and 191 (87%) were single. The mean presence in relief operations of the participants was 5±3 years.

The proportion of relief workers in tertile of knowledge and attitude score was also assessed (Table-1). Mean percentage of participants was 56.5% (15.6) on the knowledge scale, and 52.9% (21.3) on the attitude scale.

After collecting demographic details (Table-2), mean scores on knowledge and attitude scales were compared. There was a significant difference between education level and the knowledge score (p= <0.0001).

Table-1: Category-wise scores of relief workers.

Score category	Knowledge	Attitude
Poor (< 34%)	13(5.9%)	29(13.2%)
Moderate (34-66%)	129(58.9%)	120(54.8%)
Good (≥ 67%)	77(35.2%)	70(32.0%)
Total	219(100%)	219(100%)

Table-2: Knowledge and attitude according to characteristics.

	No	Knowledge		Attitude	
		Mean±SD	Pvalue	Mean±SD	Pvalue
Age (year)					
<20	34	53.0±12.4	0.208	54.2±22.5	0.502
20-25	140	56.5±16.0		51.7±20.8	
>25	45	59.2±16.1		55.7±22.2	
Education level					
<Bachelor degree	67	50.2±14.6	0	55.0±22.1	0.338
≥Bachelor degree	152	59.3±15.2		52.0±21.0	
Children					
Childless	214	56.6±15.7	0.614	52.7±21.2	0.269
At least one child	5	53.0±7.6		63.3±26.1	
Marital status					
Single	191	56.3±15.2	0.574	52.8±21.1	0.857
Married	28	58.0±18.5		53.6±23.1	
Presence in relief operations (number)					
<5	114	56.8±13.6	0.792	51.4±20.1	0.28
≥5	105	56.19±17.6		54.5±22.6	
History relief workers (year)					
<5	179	56.2±15.4	0.65	51.7±21.1	0.086
≥5	40	57.5±16.2		58.1±21.6	
Total	219	56.5±15.6		52.9±21.3	

SD: Standard deviation.

Table-3: Relief workers' first aid practices.

Variables (%)	Yes no. (%)	No no. (%)
Working with expert relief worker	207(94.5)	12(5.5)
Subjective confidence	188(85.8)	31(14.2)
Providing psycho-social support	208(95.0)	10(4.6)
Make base decision	169(77.2)	49(22.4)
Presence in relief operations	130(59.4)	88(40.2)
Injection	67(30.6)	151(68.9)
Oral prescription	81(37.0)	138(63.0)
Wearing a relief worker uniform	215(98.0)	3(1.4)
Ability to use CPR first aid kit	118(53.9)	100(45.7)
Performing endotracheal intubation	14(6.4)	205(93.6)

CPR: Cardio pulmonary resuscitation.

Out of the total, 130 (59%) relief workers knew how to use the relief set and carried out correct practices with the emergency team. However, only 14 (6%) knew how to perform intubations.

Almost all relief workers wore a relief worker's uniform and worked with the expert relief worker in the performance of their duties. More than 85% of the subjects indicated their subjective confidence by providing psychosocial support during the relief operation, while around 53% of them knew how to work with CPR first aid kits. Almost half of the subjects were able to make the best decision during the relief operation.

Discussion

As the data shows, all the relief workers in the study were men. This may be because the Red Crescent Society has very few women volunteers. A study conducted in 30 provinces on 3500 Norouz holiday travellers showed that relief services are important for the holiday travelers.[14] Therefore, knowledge regarding relief operations is also important. However, this study showed the overall mean score of relief workers was moderate (mean score 56.5%). Similar trend was demonstrated by relief workers on the attitude score (mean score 52.9%). Our finding are comparable with the results of a study that was conducted in India which showed less than adequate knowledge (52%) and practices (54%) in all groups of participants (resident doctors, hospital consultants and private practitioners) but there was a higher attitude score of 82%.[16]

Another study revealed that the level of first aid and basic life support among the Dutch junior doctors was low and the majority of them were trained in first aid procedures in the Netherlands. It was seen that 11% of junior doctors performed the correct first aid scenario, and 6% of them performed the correct CPR according to Berden's international criteria.[17] CPR has an important role in preventing 25% of out-of-hospital mortality.[18] All relief workers located in Norouz rescue and relief bases of the Red Crescent Society of Mazandaran were taught how to use CPR first aid kit or handle an emergency without a hospital setting at the site of the accident or in the field emergency bases. Our study showed that 53% of the relief workers knew how to perform a CPR. Thus, almost half of relief workers did not know how to correctly perform a CPR. Our results also showed a contrast to practice of medical students, where 32.2% knew how to correctly perform a CPR.[19] Besides, 94 percent of the relief workers reported that they did not know how to perform endotracheal intubation.

Conclusion

The study found moderate knowledge and attitude among the relief workers located in Norouz rescue and relief bases of the Red Crescent Society of Mazandaran about first aid procedures. Education programme to improve practices among relief workers regarding emergency management of traffic injuries need to be implemented.

Acknowledgments

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