

Educational needs of paramedics in process of relief and transfer of war victims with abdominal lacerations in ground wars

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Abstract

Aims. Presence and effective measures of therapeutic cadre and paramedics is one of the important factors that if done timely and with specified program and science can prevent many damages, preserve soldiers' morale and prevent complications. Undoubtedly making correct clinical decisions, design in stressful situations, order of data and information and appropriate use of theoretic and practical educations are of paramedics' responsibilities, which have been studied in this research.

Methods. This investigation is a descriptive cross-sectional study. According to study subject, questionnaires were prepared and disposed to 50 paramedics who were present at war. Obtained data were analyzed and assessed according to study goals with SPSS statistical software.

Results. In recognition field, paramedics diagnosed 70% of abdominal lacerations to need emergency interventions. In transfer field, 50% of paramedics' answers about therapeutic cares for sharp abdominal traumas were incorrect. In mental and emotional fields, 42% of paramedics mentioned practical and theoretic training and domination on work, as the best mental and emotional support.

Conclusion. According to results of this study, paramedics need education in three recognition, transfer and behavior fields.

Keywords: Recognition Field, Transfer Field, Emotional Field, Abdominal Lacerations, Ground Wars, Victims Transfer

Introduction

One of the events that human has encountered throughout history is war phenomenon. War which is considered as one of the crises and unexpected disasters for humans endangers the most important human capital that is undoubtedly his life. Therefore, all over the history of wars, certain measures and endeavors have been done to save wounded soldiers. Perhaps the most important reason for emergency advances has been the occurrence of wars. Before humans' attention to this issue, wounded soldiers were left in the battlefields to die.

Clearing the scene of war from victims and taking care of them for reconstruction of human resources was a plan performed during Seminole War (1835 - 1842) for the first time. In this plan, after cleaning battlefield, wounded soldiers were classified behind the front. Some of them were treated as outpatients and the rest were transferred to the back [1].

Growth and dynamics of emergency efforts and emergency medical service in current history, have been carried out in wars and among these, various people and communities have undertaken many efforts to develop international laws. Due to efforts and persistence of these people and institutions, emergency medical service in wars became as a legal and legitimate international society far from parties'

conflicts and debates and the Red Cross committee was founded [1].

In the process of relief and transfer of war victims, timely presence and quick paramedical services to victims seems necessary. On the other hand, type of injuries in wars has changed by advances in tools and modern equipments, which are used from far distances, and has higher traumatic or deleterious power and rate. Modern urgent paramedical, caring and rehabilitation efforts should be done in accordance with the type of these injuries, due to the structural changes and diversity in weapons and the appearance of special injuries [2].

The most important measure in the relief and transfer process is saving victims from death and preventing from subsequent complications and injuries. Thus the presence of skilled and experienced paramedical groups beside soldiers seems mandatory. Today, in most armies of developed countries and some developing countries, "war health" plays a special role and these countries, using experiences of world wars and information technology, try to train qualified physicians, nurses and paramedics along with their operating units to deliver their paramedical services as fast as possible. These developments have been done in fields of human resources training, equipment supply, structure and vehicles [2].

War health is one of the active units in armed forces

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during wars, which by sending paramedical and specialist forces to war areas at different periods try to preserve the life of soldiers. One of the effective activities of war health is the process of relief and transfer of soldiers to field hospitals, which requires complex procedures and is considered as one of the important cycles of saving soldiers. In this cycle, paramedics as professional forces are the most effective aid group regarding their experimental skills and attending necessary trainings, which reduce the severity of casualties and complications in time of victims' transfer [3].

Despite weaknesses, defects and shortcomings, the Army of the Guardians of the Islamic Revolution, has gained valuable experiences in the field of relief and transfer of war victims during the Holy Defense. Therefore, collecting and analyzing their information and experiences and the efforts done during the Holy Defense and recording and transferring them to next generations and offering administrative strategies are necessary [2].

By studying 10000 existing records in the unit of "war medical documents and statistics" in Shahid Baqai hospital in Ahvaz, the rate of different types of war injuries in ground wars was evaluated and it was found that most soldiers' injuries and lacerations has been abdominal (and limbs with lower percentage) [4]. Due to the sensitivity of abdominal injuries and their diversity, this article investigated the paramedics' educational needs in the three fields of cognitive, psychological and transfer, so that according to results, required educational gaps in three above areas could be identified and appropriate solutions and strategies provided.

It is necessary to mention that as well as present study, various related and near researches and studies have been performed in Iran and the world which indirectly have dealt with activities of paramedics in time of encountering unexpected events such as war. However, in the educational needs area, no similar study has been conducted and this study is unique in this respect. Results of this study can be used by educational units of armed forces, Red Crescent, and other medical centers of medical sciences.

Methods

This research is a descriptive study which has been conducted with cross-sectional approach and studying 10000 existing records in "war medical documents and statistics" unit of Shahid Baqai hospital in Ahvaz. According the results, a questionnaire containing 50 questions was designed with the help of specialists. Then the questionnaire was distributed among 10 war

paramedics and after the extraction of results the same questionnaire was distributed among the same group after a week. Results were analyzed twice and the questionnaire was confirmed with 90% validity.

This questionnaire contained 23 questions in recognition field of paramedics, from which 11 questions were on recognition of lacerations types and severity of lesions, 6 questions about recognition of clinical symptoms of victims with abdominal lacerations and 6 questions about recognition of physiologic disorders in abdominal lacerations. In order to examine the transfer field, 21 questions were designed, from which 10 questions were associated with necessary paramedical efforts and measures in abdominal lacerations and injuries and 11 questions associated with correct transfer process in lacerations and injuries. The rest 6 questions encompassed psychological field and paramedics' use of emotional and sensational tools in solacing war victims with abdominal injuries. This questionnaire was distributed among 50 paramedics from the total 250 paramedics who were randomly selected using sample volume formula. The obtained data were analyzed using SPSS 11.2 by descriptive statistics with one way tests and LSD.

Results

Table 1 illustrates the proposed questions in recognition field with the percentage of correct answers. 70% of paramedics considered deep lacerations as injuries that required emergency measurements and 5% of them believed that abdominal wound infections had occurred due to infected wounds in time of injury. 40% of paramedics defined clean wounds as random wounds, open and fresh wounds and surgical wounds, and 60% of them considered infected wounds as non-infectious surgical wounds in which there is no inflammation.

The cause of abdominal laceration infections in war was defined by 80% of paramedics as delay in immediate attention to victims with abdominal lacerations. 40% of paramedics accounted bleeding as the most important complication of abdominal lacerations and 30% of them believed that infection is more important. 42% of paramedics thought that the cause of death risk in abdominal lacerations was injury of blood vessels and 30% thought it happened due to spleen injury. 50% of paramedics believed that being heated by shock waves and contusion traumas are more important and should be taken into account and 58% stated the pain, inflammation, redness in infected areas along with digestive disorders as the shock wave symptoms in abdominal lacerations.

Table 1- Recognition field questions and the percentage of correct answers

Title of psychological field questions	Percentage of correct answers
Most important psychological supports of victims with abdominal injuries	42(45)
Most war victims' psychological concern	46(46)
The effect of psychological support role on saving victims' lives	44(47)
Practical cases of psychological support in the process of transfer and relief	32(48)
Influential factors in psychological support of paramedics in the process of transfer and relief	42(49)
Considering educational needs in curriculum of paramedics	64(50)
The average percentage of correct answers in psychological field	45

Table 2- Questions of psychological field and the percentage of correct answers

The title of recognition field questions	Percentage of correct answers
Immediate measures in abdominal damage	70(1)
Most damages of abdomen in ground wars	80(2)
Contamination and infection of abdominal injuries	50(3)
Definition of clean wounds	40(4)
Definition of infectious wounds	20(5)
Probability of abdominal wound infections in wars	80(6)
The most important complication of abdominal injuries	40(7)
Risk of death in abdominal injuries	42(8)
Risk of death in contusions and being heated by shock waves	50(9)
Shock wave symptoms in abdominal injuries	58(10)
Clinical symptoms of penetrating wound in abdominal injuries	56(11)
Influential factors in abdominal wound infections	28(12)
Comparison of abdominal injury symptoms in normal and war conditions	44(13)
Golden time for therapeutic interventions in abdominal injuries with active bleeding	58(14)
Passing abdominal injury recognition courses by paramedics	32(15)
Necessity of training courses in victims' transfer and relief process	70(16)
Important problems in victims' transfer and relief process	62(17)
Most appropriate vehicle for transferring victims with abdominal injuries	70(18)
The average level of information required for paramedics	34(19)
The necessity of paramedics training in the process of victims' transfer and relief	62(20)
The effect of keeping the minimum distance from front lines	82(21)
The best assistant in the process of victims' transfer and relief	36(22)
Factors related to saving the lives of victims with abdominal injury	48(23)
The average percentage of correct answers in recognition field	52.7

56% of paramedics believed that the clinical symptoms of penetrating wounds in abdominal injuries were active bleeding and occult bleeding. 28% of them believed that cause of abdominal injury infections at the time of transfer is infected dressing and 24%, attributed it to being infected with soil and 32% attributed it to lack of attention to the wound at the time of transfer. 44% of paramedics thought of differences in type and severity of abdominal injuries in war as normal and 16% believed that there was no difference in wounds!

Table 3- Transfer field questions and the percentage of correct answers

The title of transfer field questions	percentage of correct answers
Most important therapeutic measures for war victims with abdominal injuries	52(24)
Measures to prevent wound infection in abdominal surgery	34(25)
Urgent therapeutic intervention in abdominal penetrative injuries	50(26)
The best therapeutic measure before transferring war victims	44(27)
Feedback related to the best vehicle for transfer of war victims	74(28)
War victims transfer time from the scene of event to care center	36(29)
Major means of transportation for injured people	76(30)
Required equipments of ambulances	70(31)
Triage priority of victims with abdominal injuries	40(32)
Necessary measures at the time of transferring the injured soldiers with abdominal injuries	46(33)
Beginning time of therapeutic care for war victims	56(34)
Relief measures for war victims with abdominal injuries	84(35)
Necessary measures in abdominal injuries with visceral herniation	62(36)
The effect of paramedics training on the process of transfer	72(37)
The best position of victims with abdominal injuries at the time of transfer	20(38)
The best method of transporting victims with abdominal injuries	84(39)
Necessary equipment in relief backpack	44(40)
Best Time for taking advantage from paramedics in the process of transfer and relief	50(41)
The action leading to decrease of subsequent complications of victims with abdominal injuries	36(42)
Diet of war victims with abdominal injuries	90(43)
Necessary action for preventing excessive movement of injured soldiers during transportation	46(44)
The average percentage of correct answers in the transfer field	55.5

58% of paramedics, considered the golden time of saving the life of victims with abdominal injuries about 15 to 20 minutes and 36% considered it about 25 to 30 minutes and only 6% of paramedics believed the golden time 30 to 40 minutes. 26% of paramedics hadn't passed courses of special war lacerations and injuries and 32% had only passed short time courses and 4% had passed long time courses. 70% of paramedics believed that establishing training courses for paramedics is completely important and 6% considered it ineffective.

82% of paramedics, considered the effect of keeping the minimum distance from front lines important in paramedics' quick operation and the areas under coverage, and it is interesting that none of paramedics did mention the effect of this issue on transfer and relief. 48% of paramedics, attributed saving victims' lives to severity of injuries, bleeding volume and shock stages. Overall, the rate of correct answers seemed disappointing and in recognition field the average of correct answers was 52.7%.

Table 2 shows question titles of psychological field and the percentage of correct answers. 52% of paramedics considered the most important therapeutic measures of war victims with abdominal injuries as bleeding control, determining the severity of injury and psychological support. 22% of paramedics thought that washing the wound is enough for preventing infection, and 50% believed that wound packing before victim's transfer is the most emergency therapeutic measure in abdominal penetrating injuries along with vital signs control at the time of transfer and only 10% believed that psychological supports are necessary and are the most important measure.

10% of paramedics thought of bus as a proper vehicle for transfer of injured soldiers and 8% mentioned the transfer time more than 40 minutes! Only 14% of paramedics believed that transfer of injured soldiers had been done by paramedics. 70% of paramedics considered the availability of emergency medicines and equipments such as oxygen, suction and shock device in ambulance, necessary. 54% of paramedics did not consider the triage of injured soldiers with abdominal lacerations as the first priority. 12% of paramedics considered merely quick transfer necessary and 24% considered only bleeding control in urgent measures field for the victims with abdominal lacerations, necessary. It is remarkable that 80% of paramedics did not know the best condition for transfer of injured soldiers with abdominal lacerations. In transfer field, averagely 55.5% of answers were correct.

The title of psychological field questions and the percentage of correct answers are summarized in table 3. In this field's questions, 42% of paramedics believed that paramedics' quick reaction is the best psychological support for injured soldiers with abdominal lacerations. 26% of paramedics considered the proper equipments as the best psychological support and only 16% believed that verbal support is necessary. 28% of paramedics mentioned delay in reaching to hospital as the most important cause of soldiers' worry and 16% rejected the role of psychological supports in saving the life of injured soldiers.

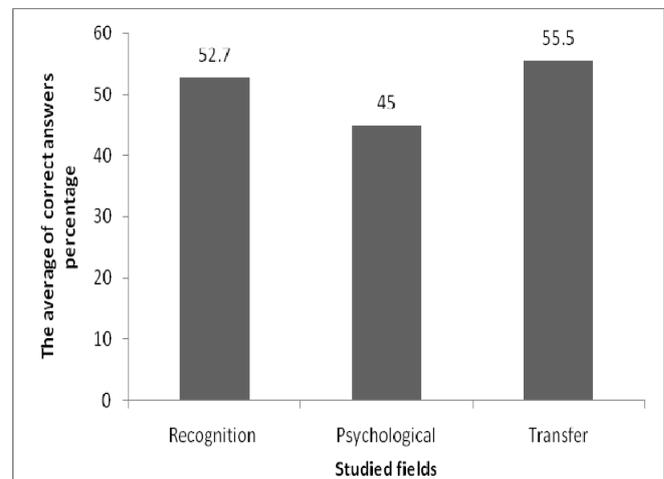


Diagram 1- The average of correct answers percentage for each of studied fields is illustrated in this diagram

62% of paramedics believed that in available educational curriculum of paramedics, no instructions are considered for war victims with abdominal lacerations and 14% believed that instructions for war victims with abdominal lacerations are considered, but are not sufficient. Only 6% of paramedics believed that these topics exist sufficiently in educational curriculum of paramedics. In psychological field the average of correct answers percentage had considerable descent and reached to 45%.

In diagram 1, the average of correct answers percentage in each field is shown. In order to investigate the significance of percentage difference of correct answers in each field, one way ANOVA was used and $p=0.474$ was obtained, which showed that the percentage difference between correct answers is not significant. To reconfirm the results, LSD test was used and percentages were compared in pairs. Calculated p value of these tests was also more than 0.005 which implied that the difference is not significant.

Discussion

As mentioned in results, in three awareness fields paramedics have answered 53% of questions correctly. Having further review of the definition of these three fields, it is found that paramedics' educational approach should be checked in order to clarify its deficiencies and shortcomings.

As mentioned above, recognition field includes the goals which require recognizing and reminding the learned subjects [5]. It is concluded from this definition that in education process, the levels of this field are not taken into account and cognitive skills have not been completed. These levels include knowledge, i.e., what we are supposed to learn, recognizing and understanding, i.e., mental inference and deducting of what we have learned, application, i.e., the ability of applying the learned knowledge, analysis, i.e., the ability of examining the learned knowledge, synthesis, i.e., the ability of combining the learned knowledge with previous knowledge, and evaluation, i.e., the ability of assessing and evaluating the result of the learned knowledge. Thus, regarding table 1 which illustrates the results of paramedics' answers to recognition field questions, the necessity of paying attention to addressed levels in regulating the topics becomes clear. Psychological field evaluates the training goals in emotional area, and topics such as attention, reflection, validation, editing and clarity are addressed in this field [5]. In instructing the issues associating with psychological field to paramedics, this issues should be taken into account more seriously and unfortunately this field has not taken into account sufficiently either. In transfer field which is the practical reflection of recognition and psychological

field, paramedics have reinforced this inference with 55.5% of their correct answers that in educational process, the educational levels of this field are not considered either and the learning process has been incomplete. Transfer field deals with physical skills and its aim is correct, accurate, suitable, quick and appropriate performance of acquired skills [5]. With reference to the results of table 2, which includes the answers of transfer field questions, acquiring proficiencies by means of continuous and serious performance of theoretic learned subjects should be particularly taken into consideration.

Conclusion

With regard to the result of this study and addressed issues, it seems that some changes in educational contents of paramedics and other individuals who attend battle scene are necessary in order to improve the process of transfer and relief of injured soldiers particularly those with abdominal injuries.

References

- 1- Mirian, M., transfer of injured people (land, air). First edition. Tehran: Golbaran publication; 2000, Fall.
- 2- Haj Ahadi, T., reviewing the Sepah health experiences during holy defense. Military medicine. 2002; 2: 75-80.
- 3- Country medicine society's Basij; summaries of essays of second international health, treatment and crisis management in unexpected events congress. december , 2003.89.
- 4- Country medicine society's Basij. summaries of essays of second international health, treatment and crisis management in unexpected events congress. june , 2003.55.
- 5- Sodares, B., surgical internal nursing; emergencies' nursing. First edition. Delavarkhan, M., Bishevaran, P., Motarjeman. Tehran: Bashari publication; 2000.