

The 41st ICMM World Congress on Military Medicine, so far, so Close!

Ali Reza Khoshdel^{1,*}

¹Department of Epidemiology, Faculty of Medicine, AJA University of Medical Sciences, Tehran, IR Iran

*Corresponding author: Ali Reza Khoshdel, Department of Epidemiology, Faculty of Medicine, AJA University of Medical Sciences, Tehran, IR Iran. Tel/Fax: +98-2188337909, E-mail: alikhoshdel@yahoo.com

Received 2015 November 7; Accepted 2015 November 7.

Indonesia was so far from Iran, but we experienced a close relationship with all participants from deferent nations when explored common interests and shared vision with them about military medicine. Although it looked paradoxical, all delegates were military forces who tried for peace and health, even for their enemies!

1. Official Report

The 41st ICMM World Congress on Military Medicine was organized in the Nusa Dua Convention Centre, Bali, Indonesia, from the 18th to the 22nd of May, 2015 by the Indonesian Ministry of Defence in collaboration with the Indonesian Ministry of Foreign Affairs, the Surgeon General of the Indonesian Defence Force, the Indonesian Military Medicine Association (IMMA) and the International Committee of Military Medicine (ICMM).

On May the 18th, the congress was inaugurated by the Vice-President of the Republic of Indonesia, Mr. Muhammad Jusuf KALLA and the keynote lecture was given by the Minister of Defence of Indonesia, General TNI (ret) Ryamizard RYACUDU. The Congress was attended by 750 participants representing 80 ICMM Member and Observer States.

As cultural part of the congress, our Indonesian hosts organized an Icebreaker party on Sunday evening, the 17th of May, a Gala dinner on Tuesday evening the 19th of May. On Wednesday, the 20th of May, the participants could take part in various cultural events.

At the General Assembly which was held on the occasion of the World Congress, India was elected as the country organizing the 42nd ICMM World Congress on Military Medicine.

The ICMM is very grateful to the Minister of Defence and to the Minister of Foreign Affairs of Indonesia, to the Surgeon General of the Indonesian Defence Force and his team, the Chairman of the Organizing Committee and his team, the Chairman of the Scientific Committee and his team and to all the people who made this 41st ICMM World Congress of Military Medicine very successful.

1.1. Scientific Report

The scientific committee of the congress chose to organize plenary sessions with invited international experts. These sessions were followed by symposia, workshops, roundtables and free papers sessions on the same topics.

The topics were:

- Health aspects of protecting the health condition of armed forces personnel,
- Humanitarian assistance and disaster relief,
- Chemical-Biological-Radiological and Nuclear threats: medical management,
- Emerging infection diseases and re-emerging diseases in specific military population,
- Environmental and preventive medicine,
- Emergency management of battlefield injuries,
- Military health education and training,
- Military health promotion and rehabilitation.

The following main topics were discussed in 4 Plenary Sessions:

- Ebola haemorrhagic disease as a novel virus in emerging and re-emerging infectious diseases,
- Peace keeping force in humanitarian assistance and disaster relief operation,
- Chemical, biological, radiological and nuclear hazards in military personnel,
- Combat casualties care and war surgery.

There were also 24 sessions of satellite symposia, 8 workshops, 5 round table discussions, 7 'meet the experts' presentations, 16 sessions with presentations of free papers and 15 categories of poster presentations.

In the scientific sessions presentations were given by 148 speakers from 30 ICMM member states, presenting various interesting topics in Military Medicine. Free papers and posters were presented by 199 authors. In total, 440 abstracts were delivered during the congress.

The 41st ICMM World Congress on Military Medicine was accredited by the European Accreditation Council for Continuing Medical Education (EACCME), granting 20

European CME credits (ECMEC). The congress was also accredited by the Indonesian Medical Association (IDI), the Indonesian Dentist Association (PDGI), the Indonesian Nurse Association (PPNI) and the Indonesian Pharmacist Association (IAI).

During the closing ceremony on Friday, the 22nd of May, the Jules Voncken Prize for the best scientific article published in the International Review of the Armed Forces Medical Services (IRAFMS) was awarded to Brigadier General Hafiz SAMMA from Bangladesh for his article; "Outbreak of Acute Viral Hepatitis E among Bangladesh Armed Forces Personnel of Chittagong Area" (Vol. 86/3, pp. 12-18), and the William S. Bainbridge Prize for the best poster presentation during the World Congress was awarded to Colonel Riadh ALLANI from Tunisia for his poster on "Tunisian Humanitarian Assistance to Kosovar Refugees: Benefit of a Precursor Pre-deployment Element".

1.2. Plenary Sessions

The 2014 Ebola haemorrhagic fever in West Africa mobilized a wide range of actors, among them, the national forces from the affected countries (Guinea, Liberia and Sierra Leone) and international contingents providing logistic and/or medical support. Some military field hospitals, treatment and training centers had been set up. Among numerous lessons learned one of the most important was the need of well-trained teams.

Although Ebola fever is not an actual threat for countries from the Asian region, it has been reminded that this region was already affected by other important epidemics such as Nipah virus disease outbreak, SARS and that different forms of influenza remain the main concern for this region and also for the entire world. In infectious diseases outbreaks, best results are achieved when alert and countermeasures are raised early. Some systems like real time surveillance are valuable tools for this purpose.

The Ebola outbreak has reminded us that humanitarian assistance was not limited in relief after disasters whether of natural or human origin. All these circumstances need to be anticipated by national policies, preparedness and training programs. It has been underlined that training may be helped today by modern communication technologies. But even with strong good willing and training some situations like a massive arrival of refugees may overwhelm national capacities of neighbouring countries as it is the case today with the Syrian crisis. Especially but not exclusively in the Middle East region, the asymmetrical nature of modern conflicts creates situations in which fundamental principles of humanity are not respected. During this congress, a special focus has been made on the need to protect health care personnel, more and more often victim of attacks in this type of conflicts. This is the purpose of the ICRC program "Healthcare in danger" to which a special session had been dedicated.

Training was also the key word emerging from CBRN sessions. Skills and materials have to be repeatedly as-

essed through field exercises as realistic as possible. These trainings should include also non-medical factors as coordination, leadership and communications between the teams. But most of the time we must acknowledge that emergency teams are trained to care for a limited number of victims. The issue would be very different in the case of much more patients. In such a difficult task, international cooperation and sharing of knowledge based on lessons learned would be very useful and perfectly fitting with ICMM objectives.

Obviously, it is impossible to organize a congress on military medicine without an important part dedicated to war casualties' healthcare and war surgery. Some countries having participated in recent conflicts in the Middle East and Central Asia have created centers for training and clinical research on these topics. By this way some major improvements have been performed these last years, with benefits for wounded soldiers but also for civilian population cared by emergency teams and trauma centers. Once more; lessons learned by military medicine during conflicts benefits to all the citizens. This includes also the less known but paramount chapter of rehabilitation.

It would be overconfident within such a short report to summarize all the diversity and wealth of a congress in which all the aspects of military medicine have been addressed including naval and aerospace medicine, logistic and economic issues, ethical dilemmas, dental, pharmaceuticals and veterinary aspects as well as the growing part of nurses and paramedics' tasks on the field.

Besides the four plenary sessions described above, 24 satellite symposia; 8 workshops, 5 roundtables, 7 meet the expert sessions and 16 free papers sessions have been held. With 105 posters presented we had in total 440 titles abstracts delivered.

An important participation of young officers from the host country has been noticed which is a good sign of dynamism.

We hope that the improvement of the scientific contents noticed during this congress will incite other countries to participate in our next activities.

2. Participation of Iranian Delegates

The 41st ICMM congress was very important for Iranian military forces since the membership of Iran in ICMM was planned to be voted and officially announced at the General Assembly.

Formerly, Iranian Committee of Military Medicine (Ir-CMM) had prepared a scientific selection process for an active participation in the 41st ICMM congress since September 2014. Accordingly, more than 200 papers were received and peer reviewed by at least 3 reviewers for their scientific value and validity in order to select the top papers for submission to the international congress. Therefore, more than 50% of the non-Indonesian presentations were from Iranian delegates. Furthermore, the high quality of these presentations attracted attentions to the

Iranian team. Iranian scientists actively contributed in the panels and discussions and made warm and friendly talks with delegates from other nations.

The congress steering and organizing committees had official meeting with the head of delegates and some participants from various nations, including Iranian team (Figure

8). During the congress, fundamental steps for advancement in the scientific collaborations with other countries were arranged and common interests with other teams were detected. That was a remarkable event in the first official attendance of Iran, as a member of ICMM and expected to be repeated in the next ICMM congress in Delhi.



Figure 1. Nusa Dua Resort and Convention Centre, the Venue of the Congress



Figure 2. Opening Ceremony With the Presence of the Indonesian Vice-President, the Ministry of Defense of Indonesia and ICMM Officials



Figure 3. Medical Exhibition Hall Contained Several Medical Equipment for Military Purposes



Figure 4. Scientific Sessions, Where Iranian Delegates had an Active Contribution as Moderators, Speakers and Presenters

3. Top 30 Iranian Abstracts

3.1. IRAN-1: REM Desensitization as a New Therapeutic Method to Post-Traumatic Stress Disorder (PTSD)

Khodabakhsh Ahmadi,^{1*} Majid Hazrati,¹ Mohammadjavad Ahmadizadeh,¹ and Sima Noohi¹

¹ Behavioral Sciences Research Center, Baqiyatallah University of Medical Sciences, Tehran, IR Iran

* Corresponding author: Khodabakhsh Ahmadi, Behavioral Sciences Research Center, Baqiyatallah University of Medical Sciences, P.O. Box: 19395-5487, Tehran, IR Iran. Tel/ Fax: +98-21-88053767, E-mail: kh_ahmady@yahoo.com

Background: In the current study, we aim to evaluate potential efficacy of a new therapeutic approach in post traumatic stress disorder (PTSD) in comparison with eye movement desensitization and reprocessing (EMDR), a standard treatment approach and controls.

Materials and Methods: The study was designed using a randomized controlled trial methodology. Finally 33 male personnel of Iranian Navy, confirmed cases of PTSD, aged between 25 and 50 were included into three subgroups: EMDR; REM Desensitization; and controls (who received no therapy). Mississippi Scale for PTSD, Pittsburgh Sleep Quality Index (PSQI) and a death anxiety questionnaire were used for the measures.

Results: Multiple comparisons showed that intrusive thoughts were significantly more likely to improve with REM Desensitization versus EMDR ($P = 0.03$), while depression was more responsive to EMDR ($P = 0.03$). Among the Pittsburgh scales' items, sleep quality ($P = 0.02$), sleep duration ($P = 0.001$), and total sleep quality score ($P = 0.002$) were significantly more likely to improve with the REM Desensitization. Change in the death anxiety scores was not different between subgroups excepting EMDR versus control group ($P = 0.05$).

Conclusions: REM, Desensitization, the new therapeutic approach to PTSD which has been introduced to the literature for the first time through this paper, is a highly effective strategy, even more than EMDR, the standard

treatment for the problem, in most of the evaluated subjects, with special emphasis on sleep symptoms, and also in the management of intrusive thoughts. Future studies with larger sample size by other authors are necessary to confirm our findings.

3.2. IRAN-2: The Effects of Two Teaching Methods to Improve nurses' Competency and Preparedness Against Incidents Induced by Biological Agents

Abbas Ebadi,¹ Shahla Yousefi,¹ Morteza Khaghanizade,¹ and Yaser Saeid^{1*}

¹ Trauma Research Center and Nursing Faculty, Baqiyatallah University of Medical Sciences, Tehran, IR Iran

* Corresponding author: Yaser Saeid, Trauma Research Center and Nursing Faculty, Baqiyatallah University of Medical Sciences, Tehran, IR Iran. Tel: +98-9131978416, E-mail: yasernurse84@yahoo.com

Background: Two main areas exist within emergency care where biological agent's preparedness can be focused: departmental preparedness and staff preparedness. Despite their important role in biological incident response, little is known about nurses' preparedness of these events.

Objectives: The aim of this study was to investigate the effectiveness of a multimedia instructional module versus a traditional lecture format on nurses' competency in order to find out which method might be more effective for nurses' facing biological incidents.

Materials and Methods: This quasi-experimental study was conducted with a research population of 90 registered nurses which randomly divided into three groups (lecture presentation, multimedia-CD, and control). Data Collection tools included thirty-four multiple-choice questions (MCQ) for measuring knowledge and visual analogous scale (VAS) being graded (0 - 100) for assessing attitude.

Results: The results revealed no statistically significant difference between nurses' competency mean scores in the lecture and multimedia CD groups. That is, the two

methods of training, lecture and multimedia CD, had similar effects on nurses' knowledge and attitude.

Conclusions: In addition, in order to save time and money, we recommend the use of multimedia CDs for nurses' in-service education.

Keywords: Biological Agents; Competency; Nursing; Preparedness; Multimedia; Teaching

3.3. IRAN-3: Field Evaluation of Permethrin-treated Military Uniforms Against Main Malaria Vector, *Anopheles stephensi* (Diptera: Culicidae) in Iran

M. Khoobdel,¹ M. Shayeghi,² H. Vatandoost,² Y. Rassi,² MR. Abaei,² H. Ladonni,² A. Mehrabi Tavana,¹ and SH. Bahrami³

¹ Health Research Center, Baqiyatallah University of Medical Sciences, Tehran, IR Iran

² Department of Medical Entomology, Faculty of Public Health, Tehran University of Medical Sciences, Tehran, IR Iran

³ Faculty of Textile Engineering, Amir Kabir University, Tehran, IR Iran

Background: Malaria is one of the most important insect born diseases in tropical and sub tropical regions in the world and is one of the major public health problems in Iran. *Anopheles stephensi* (Liston, 1901) is one of the most important vector of malaria in south of Iran. Over the past decades, personal protection methods against vectors have increased as a result of efficacy and safety to human. In recent years, great progresses have been occurred in protecting people, especially military personnel, against arthropod bites and vector-borne disease, using repellents, and treating textile with pyrethroids insecticides.

Objectives: In this study which has been performed for the first time in Iran, the protection of permethrin-treated military uniforms against mosquitoes in a rural field has been conducted.

Materials and Methods: In this study, six types of current military uniforms of Iran were treated by permethrin (0.125 mg permethrin [AI]/cm²) and examined against the biting of natural population mosquitoes of rural areas of Kazeroon, Fars Province, south of Iran, namely *Anopheles* and *Culex*. Eight volunteers were selected for this study. Six of them put on the treated uniforms and the other two ones wore the untreated uniforms. All the subjects participated in the night biting test for eight active nights. The protection percent of treated uniforms for different species of mosquitoes, in comparison with untreated ones, was calculated through determining the species of captured mosquitoes, separately from case and control subjects. The amount of residua permethrin on uniforms, before and after field test, was measured by Thin Layer Chromatography (HPTLC) method with using florescence light ($\lambda = 254$ nm) and CATS4 software.

Results: There was no significant difference in the protection of different treated uniforms against mosqui-

toes biting. The average number of mosquitoes biting among who wore untreated uniforms (controls) was 3.21 (SD \pm 1.2) mosquito biting/minute/person (192.8/h). This amount was 0.26 (\pm 0.1) (15.6/h) for who wore treated uniforms (cases). The relative protection level of treated uniforms, in comparison with untreated ones, was about 91.9%. The results showed that the relative protection percent of treated uniforms against *An. stephensi* was 78.7. In two weeks of study, there hasn't been any significant decrease in the amount of uniforms' permethrin.

Conclusions: There is no doubt that using permethrin-treated clothing is a useful technique which makes a considerable protection against *An. stephensi* and others mosquitoes species biting and if it be accompanied with application of repellents on skin, makes the maximum protection.

Keywords: Permethrin; Mosquitoes; Fabrics; Impregnation; Military Uniform; Personal Protection; *Anopheles stephensi*

3.4. IRAN-4: Comparison of the Effects of Conventional and Simulation Teaching Methods on Nursing Students' Knowledge in Personal Protection in Chemical Attacks

E. Afaghi,¹ M. Ebadi,^{2,*} ST. Shariffar,² and A. Zareiyan³

¹ Nursing Faculty, Baqiyatallah University of Medical Sciences, Tehran, IR

² AJA University of Medical Sciences, Tehran, IR Iran

³ Nursing Faculty, AJA University of Medical Sciences, Tehran, IR Iran

* Corresponding author: M. Ebadi, AJA University of Medical Sciences, Tehran, IR Iran. Tel: +98-9124974005, E-mail: monireh.ebadi349@gmail.com

Introduction: Reviews the history of human warfare especially in recent wars indicate many countries as hidden and apparent have access to the chemical, biological and nuclear warfar. In our country, Government of Iraq used Widely 92 times mustard against Iranians. We are still Witness complications among victims of chemical weapons. Protections of individual and collective is the first step defense against contamination by chemical agents. Failure to proper personal protective by Iranians in Iraqi imposed war against Iran Especially the lack of mask making and or Lack of training and Culture of personal protective despite having Equipment has led victim biggest of chemical warfare on the world. This study was designed to compare the effect of conventional and simulation training on nursing students' knowledge in Personal protection in chemical attacks.

Materials and Methods: In this training trials study Comparison of the effects of conventional and simulation teaching methods on nursing students' knowledge in Personal protection in chemical attacks. 78 nursing students AJA University of Medical Sciences were selected and allocated randomly to two groups of simulation and conventional

Education. Data collection included a researcher-made questionnaire consisting of two sections including demographic information and questionnaire to assess their knowledge and questionnaires were completed by nursing students before and two weeks after education. Its validity was determined by content validity method and its reliability by test/retest. Data was analyzed using descriptive and interpretive statistical methods and SPSS version 20.

Results: Knowledge scores means in the two methods of simulation and conventional education increased from 22.677 and 21.95 ($P = 0.204$) before education to 26.22 and 26.31 ($P = 0.846$) after education. Mean scores of knowledge in the two methods significantly increased after education ($P < 0.05$). There was no significant difference between the two methods concerning knowledge scores means.

Conclusions: The present study showed that educational is necessary for increasing knowledge. But there was no significant difference between the two methods concerning knowledge scores means in Personal protection in chemical attacks.

Keywords: Personal Protection; Simulation Method; Conventional Method; Knowledge; Nursing Students

3.5. IRAN-5: Delayed Ultrasound Examination Increase the Sensitivity of the FAST Exam in Blunt Trauma

Babak Shekarchi^{*}

¹ Department of Radiology, Faculty of Medicine, AJA University of Medical Sciences, Tehran, IR Iran

Abdominal injuries rank third as cause of traumatic death just after head and chest injuries. The use of ultrasound for the detection of intra-abdominal injuries was first described more than thirty years ago.

Ultrasonographic examination is currently the modality of choice for the assessment of hemoperitoneum in blunt trauma patients and has broadly replaced diagnostic peritoneal lavage (DPL) in these patients. The utility of FAST has widely acknowledged, and FAST is being used in prehospital, combat, and veterinary setting as well as outer space. Wide range of sensitivities has been reported in international studies (42 - 87%). The sensitivity of FAST relies on different factors, the two most important of which are: Expertise of operator and the amount of free fluid in the peritoneal cavity at the time of sonography, especially for the inexperienced operator. Different studies have shown that the minimum of 100 to 600 cc of fluid is detectable by the FAST exam.

We performed a prospective study on all trauma patients triaged to Pursina trauma hospital at the Gilan University of medical sciences from March to October 2010. This study was approved by the hospital's institutional review board, and informed consent (written or oral) was obtained from all stable, conscious patients prior to each examination.

In all cases the FAST scans were performed by oncall radiology resident using the ultrasound machine (Ultrasonics) with 3.5 MHz curvilinear and 7 MHz Linear probes.

In our study we scanned 5 routine trauma areas including hepatorenal (Morison's pouch), splenorenal, right and left subdiaphragmatic and pelvic areas with curvilinear probe and additional Interloop area with Linear probe for free fluid. We also applied additional scrutiny to the parenchyma of spleen, liver, pancreas and kidneys for detection of solid organ injury.

All scans were considered positive if any intraperitoneal fluid or paranchymal injury were identified. Free fluid in Interloop area is seen as a triangular hypoecho area between intestinal or colon loops.

During the study 311 patients with the mean age of 35.5 (9 to 84 years) were included. 41 of 311 patients, with respect to their ultrasound, CT scan and/or Intraoperative results were found to have some abdominal pathology (hemoperitoneum or paranchymal injury).

We divided our patients to 7 groups (for the purpose of statistical analysis we put patients with positive finding only in Interloop area into separated groups).

In 280 cases neither in first nor in delayed ultrasound exam any free fluid or paranchymal injury was detected. For those cases with negative FAST scans, three were found to have hemoperitoneum by subsequent CT scans after admission. iCT scans were done in 62 of these patients either because of persistent abdominal pain or changes in clinical condition.

The sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV) of the primary and delayed ultrasound exams were as below

As conclusion, in blunt abdominal trauma defining which patients may need emergent laparotomy is crucial for life saving, especially those with unstable hemodynamic. On the other hand, avoidance of unnecessary laparotomy, which is an invasive procedure with inherent complications, is also important.

3.6. IRAN-6: The Impact of Vaccination Against Meningococcal Meningitides in Islamic Republic of Iran Military Forces

RA. Ataee¹ and A. Mehrabi-Tavana²

¹ Department of Medical Microbiology, Faculty of Medicine, Baqiyatallah University of Medical Sciences, Tehran, IR Iran

² Health Management Research Center and Department of Medical Microbiology, Baqiyatallah University of Medical Sciences, Tehran, IR Iran

Background: Meningococcal meningitides could be seen in overcrowding area like military barracks and cause high level of mortality and morbidity.

Objectives: The aim of this study was to determine the role of vaccination as intervention in order to prevention the meningococcal meningitides infection.

Materials and Methods: In the cross-sectional study, the document related in three-projects including: the incidence of mortality in high risk population, intervention of control the disease by vaccination and its ef-

iciency in the conscripts. In addition, epidemiological evidence of the disease and advanced laboratory method was surveyed.

Results: The result of the research indicated that, the vaccination and time of shot has been succeed in order to protect the at risk group with high level of immunity. Nevertheless, the vaccination accompanied with management of (compulsory vaccination at least 2 weeks before arriving to camps) at risk soldiers caused the prevalence of mortality come down lower than 0.02% in cases by the end of 2012. Sporadic cases were the result of complement deficiency in patients and also late vaccination (2 - 3 days before arriving to the camps). Based on this research the most patients who were at risk of meningitides were retried personals and their relative families respectively. In addition, 35% of bacterial meningitides was due to *S. pneumoniae*.

Discussion: The results of this research indicated that the prevalence of mortality from 106 cases in 2001 come down to nearly zero in 2012 which is related to new intervention of meningococcal meningitides control by vaccination and it's significant impact in order to reduce the infection. While, the incidence of pneumococcal meningitides increased. However, the findings of this study indicate that the consistent time of vaccination could be effective factor in order to prevent the disease.

Keywords: Vaccination; Meningococcal Meningitis; Conscript; IR Iran

3.7. IRAN-7: Knowledge and Attitude of Military Forces Toward First-aid Management of Dental Trauma in Iran

Behzad Latifian,¹ Bita Rohani,¹ Abbas Pasandi,² and Amir Hossein Nejat²

¹ Department of Oral Medicine, AJA University of Medical Sciences, Tehran, IR Iran

² General Dentist, Mashhad, IR Iran

Background and Aim: According to the physical strains in the military forces, dental traumas are common among combatants and first aid management of the injured force is of high importance. The aim of the present study was to evaluate the knowledge and attitude of military forces regarding first aid management of dental traumas.

Materials and Methods: In this cross-sectional study, knowledge and attitude of 125 forces toward management of dental traumas was evaluated using a questionnaire (Cronbach's alpha coefficient of 0.81 in knowledge and 0.89 in attitude section). To analyze data, parametric analysis including t-test and Pearson correlation tests were performed with the confidence interval of 95%.

Results: 112 (89.6%) completed questionnaires were collected. The mean age of participants was 35.27 ± 6.78 years old. 68 (60.7%) of participants were officer. Among participants, 76 (67.8%) and 30 (26.8%) had participated in general and dental trauma first aid management courses, respectively. 86 (76.8%) forces had witnessed a dental trauma. The

attitude of officers and who had participated in dental trauma first aid management courses was significantly higher (P value < 0.05). In addition, participating in dental trauma first aid management course had significant effect on the knowledge level (P -value < 0.05). Moreover, Positive and significant correlation was found between attitude and knowledge ($r = 0.617$, P value = 0.001).

Conclusions: While the number of military forces witnessing dental traumas during their service was high, their knowledge and attitude toward first management of these traumas was insufficient.

Keywords: Knowledge; Attitude; Military Force; Dental Trauma; First-aid Management

3.8. IRAN-8: Applying Machine-learning Techniques to Predict Delayed Pneumothorax and Hemothorax Following Blunt Thoracic Trauma

Ali Reza Khoshdel^{1,*} and Hamidreza Bayati¹

¹ AJA University of Medical Sciences, Tehran, IR Iran

* Corresponding author: Ali Reza Khoshdel, AJA University of Medical Sciences, Tehran, IR Iran. E-mail: alikhoshdel@yahoo.com

Delayed pneumothorax and hemothorax are among mortal possible complications of blunt thoracic trauma, particularly in military operations. Current Medical guidelines suggests close watch follow-up with 6 hours interval chest X-ray, which might not be easily available in the battle field. Then, finding reliable criteria for timely diagnosis of high-risk patients had been an area of interest to researchers.

We applied a dataset consisting of 616 patients while 17 ones experienced the delayed complications. Using classification techniques we tried to find a predictive rule to recognize high risk subjects, based on admission-time recorded clinical and radiological variables. We propose a model based on Logistic Regression with following screening accuracy: 100 (95% CI 82-100) Sensitivity, 81 (95% CI 77-84) Specificity, 49 (95% CI 33-64) PPV, and 100 (95% CI 99-100) NPV.

This enables potential elimination of 81% of negative subjects from unnecessary close watch and serial chest X-rays for the injured armed forces in the battlefields where limited emergency care specialists and facilities are available.

Keywords: Blunt Thoracic Trauma; Delayed Pneumothorax; Delayed Hemothorax; Linear Regression; Logistic Regression; Artificial Neural Network

3.9. IRAN-9: Effect of Radiation Injured Management Training by Lecture and Web-based Methods on Cognitive Learning Levels of Nursing Students

F. Baniyaghoobi,¹ SH. Aliyari,^{1,*} S. Shariffar¹ and AH. Pishgooei¹

¹ Faculty of Nursing AJA University of Medical Sciences, Tehran, IR Iran

* Corresponding author: SH. Aliyari, Faculty of Nursing AJA University of Medical Sciences, Tehran, IR Iran. Tel: +98-

2177500404-77500929, E-mail: aliyar_shah@yahoo.com

Background and Aims: With the expansion of information technology and penetrating remote media to the depth of society, education tools and methods have changed in a way that development of technology highlights using newer devices to communicate knowledge. Therefore, this study was conducted to comparatively investigate the effect of two methods of teaching management of radiation injured by lecture and web-based methods on cognitive learning levels of nursing students.

Materials and Methods: This clinical trial was carried out on 60 nursing students of two schools of military nursing in Tehran chosen based on purposive sampling in 2014. Samples were divided into two thirty-member groups and were imposed to lecture and web-based teaching. The effect of training was measured on three levels of knowledge, Comprehension and application before, immediately after training and 4 weeks later.

The resulting data were analyzed by SPSS21 software, using repeated measures ANOVA test and independent t-test.

Results: Mean and standard deviation of scores in all learning levels (knowledge, comprehension and application) in the web-based group before, immediately after and 4 weeks after training were respectively 7.83 ± 2.561 , 18.57 ± 3.308 and 10.40 ± 2.568 ($P < 0.001$) and were 7.13 ± 2.649 , 17.23 ± 3.370 and 12.30 ± 3.395 in the lecture group. No significant difference was observed between groups in post-test, in the test stage, immediately after training, mean of scores in the web-based group had a greater increase but no significant difference was observed ($P = 0.12$) The retention stage (4 weeks after training), lecture-based method proved to be effective ($P = 0.01$).

Conclusions: Despite the fact that in posttest stage, web-based training had no significant differences with lecture-based training, but according to higher scores in the web-based group and time saving, web-based method can be used instead of lecture one in some courses. on the other hand, according to the impact of lecture-based training in retention stage, if desirable conditions in terms of time and space are met and training tools are provided, It is suggested modern training methods and lecture be simultaneously used in order to enhance different levels of learning different among students.

Keywords: Radiation Injured Management-Training-Lecture (-based) Training, Web-based Training-Levels of Learning

3.10. IRAN-10: Effect of Educational Workshops of Encountering the Casualties of the Modern Wars on Performance of Nurses

N. Babai Sari,¹ SH. Aliyari,^{1,*} AH. Pishgooei,¹ and M. Jafari²

¹ Faculty of Nursing, AJA University of Medical Sciences, Tehran, IR Iran

² Novin Medical Radiation Institute (NMRI)

* Corresponding author: SH. Aliyari, Faculty of Nursing, AJA University of Medical Sciences, Tehran, IR Iran. E-mail:

aliyar_shah@yahoo.com

Introduction: The mission of the military medical centers is doubled when facing nuclear casualties, because of their severe injuries. Therefore, the aim of this paper is to study the effect of educational workshops of encountering the Casualties of the modern wars on performance of nurses.

Materials and Methods: This is a pre- and post- test quasi-experimental study. The hospitals were selected based on purposive sampling method. The samples were 72 nurses of the military hospitals in Tehran. They were divided in intervention and control groups, using available samples method. The intervention group was provided with an educational workshop on the way of facing the nuclear infected casualties. However, the control group had no intervention program. The effects of the workshop were compared in two stages (before and two weeks after the intervention), using the researcher-made Checklist with 76 items. The resulting data were analyzed by SPSS21 software, using, Spearman, Independent & Paired samples t test. The criterion for being meaningful was considered as $P < 0.05$.

Results: The mean and standard deviation of the performance level in the pre -intervention stage were 1.6 ± 1.42 and 1.33 ± 1.49 , for the intervention and control groups, respectively. The values changed into 73.5 ± 1.37 and 1.64 ± 1.7 two weeks after the intervention. The independent statistical T test revealed no significant difference before intervention among the two groups, concerning the performance score ($P > 0.05$); while in post-test stage there appeared such a difference ($P < 0.05$). However, the statistical T test revealed a significant difference before and after intervention among the two groups ($P < 0.05$).

Discussion and Conclusions: The results showed that the educational workshop was efficient. Therefore, we suggest repetition of the required educational courses regularly, in practical and scientific forms.

Keywords: Nurse; Performance; Nuclear Accidents; Nuclear Casualties

3.11. IRAN-11: Temporary Hospitals Site Selection in Cities, in Military Threatening and Terroristic Attacks Circumstances

Hamidi Farhani,^{1,*} Nader Markazi Moghaddam,¹ and Amir Keivan Amini¹

¹ AJA University of Medical Sciences, Tehran, IR Iran

Speeding in remedial reliefs is one of the main concerns in critical situations. The use of field hospitals for this purpose is so common. Site selection in crucial circumstances is one of the most important factors in improving the function of these hospitals and speeding in reliefs. In this research with the aim of selection of the most suitable urban sites in order to settle temporary hospitals in military threatening situations and terroristic attacks, the related criterions have been extracted. By using these criterions through overlapping

by GIS method, site selection was accomplished. At the beginning, the criteria were suggested by library studies and surveying worldwide case studies and then by use of Delphi method (questionnaire and panel of experts), those criteria became complete and accurate. Afterwards the accurate criteria were weighted by AHP method in Expert Choice software according to their importance. The suggested criteria resulted in this project have been presented in two main categories. The first category consists of general criteria for site selection of field hospital in cities and can be applied in all kind of crises. These criteria include: appropriate access, proper distance from existing remedial centers, proximity to population centers, plots size, ground slope and the second category consists of specific criteria in military threatening circumstances considered as complementary for the above criteria. These criteria include: distance from important buildings (function and height), distance from dangerous functions and proximity to fire stations. In related to site selection of remedial activities in military threatening situations, two different activities should be considered. The first activity includes remedial emergency activities that are necessary to be settled near the vulnerable and attacked districts in bombing in order to do the first emergency treatments on wounded persons and then sent out them to the field hospitals or long term remedial centers. The second activity includes the secondary remedial treatments and hospitalizations that can be done in long term field hospitals and it is necessary to settle these centers as far as possible from the vulnerable districts in war. In this project a district of a Metropolis was studied and finally the maps consist of priorities of suitable plots presented. The suggested method of this research and criteria and their weights can be applied in every city for site selection of field hospitals. It is suggested to apply this method for maintaining and keeping of proper plots in cities in order to use them in critical situations for remedial activities.

Keywords: Site Selection, Field Hospital, Military Threats, Crises Management

3.12. IRAN-12: Design the Model of Caring in the Emergency Department of Selective Military Hospitals

Hosein Mahmoudi,^{1*} Eesa Mohammadi,² and Abbas Ebadi³

¹ Trauma Research Center, Baqiyatallah University of Medical Sciences, Tehran, IR Iran

² Faculty of Medical Sciences, Tarbiat Modares University, Tehran, IR Iran

³ Faculty of Nursing, Baqiyatallah University of Medical Sciences, Tehran, IR Iran

* Corresponding author: Hosein Mahmoudi, Trauma Research Center, Baqiyatallah University of Medical Sciences, Tehran, IR Iran. Tel: +98-9123313719

Background and Aim: Emergency department is the Forehead Hospital. Regular rotation matters in this unit could save many human lives. One of the most important sectors in services is caring.

Care is complex and multifaceted concept that has different meanings in different situations and conditions and requires a specific pattern. Studies have shown that a specific model (for emergency ward) and appropriate institutional and cultural conditions of society Design has not been presented. This study was conducted to design the model of care in emergency patients.

Materials and Methods: This study is an integrated approach to design a model of care. At one stage of a qualitative study of the theory to explain the process of care designed by caregivers in the emergency department and then secondly, based on the findings of the first stage approach using the theory of Walker and Avant (2005) to design an appropriate model of care in the emergency department was attempted. Twenty-five of the participants based on purposeful and theoretical sampling from the nurses, patients and nursing manager were selected. Participants, Unstructured individual a total of 43 times were interviewed. Unstructured individual interviews with 30 to 100 minutes duration and 1 - 3 times and on the several times observation, is used for data collection. Information collected during 2 years 2009 and 2010 in two teaching hospitals in Tehran, until data were saturated. Data with using the constant comparative analysis principle and according to Strauss and Corbin method on three stages, including open coding, axial and selective coding were analyzed. The second phase study, Walker and Avant's method involves three steps include: The central concept (taken from the central variable of the first stage) and the conceptual framework (the central variables and concepts Meta paradigmic Nursing), A review of the literature to explain the relationship between concepts, and strategies to achieve its favorable goals And organize them in an integrated network with characteristics of a clinical model and has been prescribed.

Results: Constant comparative analysis of the data showed that, Patients and their relatives' relief of pain and suffering caused by the disease hailed as a major concern. Also nurses were concerned that the work done accurately, quickly and comprehensively. This concern of arriving in the emergency in all participants is evident in text fields and event. Stabilizing has been introduced as a core variable. So that nurses with strategies such as calm ward, giving sufficient information to patients and cared actively of their patients. But influence of confounding factors nurses used a variety of passive strategies as a contrast, of other range of active care strategy. So that impressed by the crowding, stress and disharmony perform choose some things and avoid doing some of things and were ignorance and neglect of patients meet basic needs. And do not pay attention to them. Patients and their relatives to resolve their concerns the elimination of suffer-

ing different strategies were used. Range of strategies that patients and relatives were used is from passive to active. Therefore, strategies such as beating of the nurses and doctors, protest and conflict, aggression, escape forward, insisting on care, appeal, done part of the work and cooperation have used.

These strategies led to fatigue, burnout, nurses leaving the job, rush to care, increased stress, Loss of quality of care; reduce speed, accuracy and focus and dissatisfaction in the nurses and the patients. In the next section of the study that is a favorable model for patient care in emergency ward, the main variables in the study background revealed, using a theory of development strategies (synthesis theory) to design a prescriptive theory or model, with using strategies of clinical governance to improve and develop the theory of stability was to achieve the favorable results.

Conclusions: Since the theory or model of the final was designed to be based on the discovery and understanding of facts, functions and the underlying factors on caring is real. On one side strength and fitness with field is more and understanding of them by the main stakeholders include nurses and patients are comfortable and further. Other hand expected an easier, faster and better be used by participants and brokers in the emergency department. In further due to favorable resulted treatment outcomes and the patient and nurses satisfaction, and reduce crowded and stress, efficient management and increased speed, accuracy and comprehensiveness in the emergency department. The expected and claim the need to design appropriate intervention studies in the field.

Keywords: Nursing Care; Emergency Ward; Nursing Model; Grounded Theory

3.13. IRAN-13: The Efficacy of a Nutritional Educational Intervention on Knowledge, Attitude and Behavior Among Military Medical Students

Hossein Dini-Talatappeh,¹ Hamid Reza Tavakoli,² Fatemeh Rahmati-Najarkolaee,² Arasb Dabbagh-Moghadam¹ and Ali Reza Khoshdel¹

¹ Military Medical University, Tehran, IR Iran

² Health Research Center, Baqiyatallah University of Medical Sciences, Tehran, IR Iran

Background: Studies of successful nutrition education in the target groups is shown usage patterns of behavior change in increasing the effectiveness of the training has been approved. This study determined the effects of education on the pattern of food consumption among medical students in the army University of Tehran, Iran to the correct pattern of food intake have been conducted.

Objectives: This quasi-experimental study is a pre and post educational intervention on 242 medical students from the Military University of Tehran, Iran, with the age range of 18-32 years were randomly in two Control groups (n = 107) and patients (n = 135) selected.

Material and Methods: Knowledge level, health belief

model structures (benefits, perceived barriers, perceived threat and self-efficacy) and the medical students from the army University of Tehran Iran, the pattern of food intake were compared using a four-part questionnaire (demographic characteristics, knowledge, health belief model structures and function) The play itself was completed questionnaires and then based on the data, model-driven curriculum and content of the data analysis was prepared before the test. Four weeks after the program, the second test (post test) was performed. Data obtained before and after the educational intervention, using the software 15 SPSS were analyzed.

Results: After the educational intervention, the mean score of knowledge, health belief model structure and behavior of students in the health pattern of food intake was significantly increased ($P \leq 0.05$). The mean knowledge 6.76 (1.452), including threats to health belief constructs 2.93 (1.147), perceived benefits 7.41 (1.116), perceived barriers 5.44 (1/831), self-efficacy 4.28 (1.479) and behavior 8.84 (2.527) that after this amount to about 8.3 (1.503), for structures that including threats to health 3.29 (1.196), the 7.29 (1.492), perceived barriers 5.9 (1.719), efficacy 4.6 (1.472) and the function was 9.45 (2.324). The mean score of knowledge, health belief structures (perceived threat and self-efficacy, perceived benefits and barriers) and employee performance, before and after an educational intervention was significant ($P \leq 0.05$).

Conclusions: The effect of educational intervention on food consumption patterns in the Army Medical Sciences Students University of Tehran, Iran, suggests that effective use of health belief model intervention group compared with controls.

Keywords: Health Belief Model; Behavioral Intervention; Food Consumption

3.14. IRAN-14: Study Knowledge, Attitude and Practice (KAP) Police Rescuers in Disaster Situations on NBC (Nuclear, Biological, Chemical) in Police Medical Center in Mashhad

Mohammad Gharari,¹ and Seyed Mohammad Reza Seyed Ahmadnian¹

¹ Applied Research Center of Police Force Medicine, Tehran, IR Iran

E-mail: teb@police.ir

Background: Regarding enemy threats of using chemical, biological and nuclear weapons, the fact of knowing how to respond and how to protect people against these factors is really important, particularly for police relief personnel in times of disaster. This study aimed to determine knowledge, attitude and practice of police relief staffs in 2011 on NBC in police medical center of Mashhad.

Materials and Methods: This descriptive analytical study was carried out on the second organized police personnel (aid) workers, including 94 women and 164

men through questionnaires at the police medical center in Mashhad. The data were analyzed by software SPSS 16.

Results: The results showed that about the knowledge of NBC, 26.5% of relief personnel had poor knowledge, 63.9% had average knowledge and 9.6% had good knowledge. In relation to attitude of NBC, 52.4% had a negative attitude, 36.4% had moderate attitude and 11.2% had a positive attitude. About practice, 37.1% had poor performance, 49% had average performance and 13.9% had good performance. As well as between knowledge and practice there was no significant relationship between knowledge and attitude, but there was a significant relationship between attitude and practice ($P < 0.05$).

Conclusions: Considering the fundamental role of police relief personnel in times of chemical, biological and nuclear disasters, increasing their knowledge, attitude and practice skills to do properly behaviors of protection and rescue and to control the crisis is necessary.

Keywords: NBC; Knowledge; Attitude; Practice; Relief Personnel

3.15. IRAN-15: Efficiency of Homogenous and Heterogeneous Filters for Radioactive Aerosols

Gholamreza Moradi,¹ Leyla Omid,² and Seyed Mohammad Reza Seyed Ahmadnian¹

¹ Applied Research Center of Police Force Medicine, Tehran, IR Iran

² Department of Occupational Health Engineering, School of Public Health, Tehran University of Medical Sciences, Tehran, IR Iran

E-mail: teb@police.ir

Background: Aerosols produced by nuclear processes are radioactive with large ranges. Collection efficiency of air filters is an important parameter in removal of radioactive aerosols. In this study, Collection efficiency and quality factor of homogeneous and heterogeneous filters at different flow rates were investigated.

Materials and Methods: The cascade impactor sampler was used to determine the size-activity distributions of radioactive aerosols. Liquid Scintillation spectrometer was used to measure the activity of particles. Nanofiber mats, HEPA, and ULPA filter efficiencies were measured using nano-sized sodium chloride aerosols in the range of 70 - 700 nm at different flow rates in the range between 1.58 - 5 m.s⁻¹ according to the United States Atomic Energy Commission standards. Desired particles were generated by electrospray aerosol generator. Condensation particle counter was used to measure the particle number concentrations before and after the filtration and to determine the performance of filters.

Results: The results showed that radioactive particles had extended size distribution. Maximum activity was associated with accumulation-mode particles with diameters less than 400 nm and activity rate of 1517 count per minute. The maximum permeability of filters was related to 100 nm particles which were considered as

most penetrating particle size in this medium. The quality factor is the best parameter to compare the efficiency of filters.

Conclusions: The results indicated that nanofiber mats had higher quality factor than business filters such as HEPA and ULPA filters and can be used in respiratory masks in order to eliminate particles with different size ranges such as nano-sized particles radioactive.

Keywords: Filter; Radioactive; Removal; Nuclear Process

3.16. IRAN-16: A Parasitological and Serological Study in Malaria Suspected Patients in Hormozgan Province, Southeastern Iran

Pouya Alizadeh Rad,¹ and Sajjad Razavi²

¹ Faculty of Veterinary Medicine, Tabriz University, Tabriz, IR Iran

² Faculty of Medicine, Tabriz University of Medical Sciences, Tabriz, IR Iran

Background: Presence of malaria immune factors induced by erythrocytic stages is widely used as an epidemiological approach to diagnose the infection mainly to distinguish the current, recent and past infections.

Objectives: This study was performed to find out the status of malaria, using microscopical and serological (IFA) methods in Bandar-Abbas and Minab, two malarious districts in Hormozgan Province of Iran.

Materials and Methods: 385 patients with suspected malaria symptoms were enrolled. Conventional microscopic examination and serological IFA test were employed for diagnosis of malaria.

The rates of agreement between microscopical and serological diagnosis were analyzed by Kappa test.

Results: 18.1% and 1.6% of the samples were microscopically diagnosed as *P. vivax* and *P. falciparum*, respectively.

On the other hand, the serum samples were sero-positive with *P. vivax* and *P. falciparum* antigens in 56.2% and 31.1% of the samples, respectively.

Conclusions: Serological IFA method could mainly determine the past history of malaria infection, but it was not helpful in detection of current infections. Moreover, there was no significant agreement between microscopical and serological (IFA) methods in diagnosis of malaria.

Keywords: Malaria; *Plasmodium vivax*; *Plasmodium falciparum*; Agreement; Microscopical; Serological; Iran

3.17. IRAN-17: Studying Effect of Roy's Adaptation Model-guided Education on Coping Strategies of the Veterans With Lower Extremities Amputation

Somayeh Azarmi,¹ Zahra Farsi,^{1,*} and Azam Sajadi¹

¹ Faculty of Nursing, AJA University of Medical Sciences, Tehran, IR Iran

* Corresponding author: Zahra Farsi, Faculty of Nursing, AJA University of Medical Sciences, Tehran, IR Iran. E-mail: zahrafarsi@gmail.com

Background: Any defect in extremities of the body can

affect different life aspects. The purpose of this study is to investigate the effect of Roy's adaptation model-guided education on coping strategies of the veterans with lower extremities amputation.

Materials and Methods: In a randomized clinical trial 60 veterans with lower extremities amputation referring to Kowsar Orthotics and Prosthetics Center of Veterans Clinic in Tehran were recruited with convenience method and randomly assigned to intervention group and control group in 2013-2014. To data collection, Lazarus and Folkman coping strategies questionnaire was used. After completing the questionnaires in both groups, maladaptive behaviors were determined in the intervention group and education program based on Roy's adaptation model was implemented. After 2 months, both groups completed the questionnaires again. Data was analyzed with SPSS software.

Results: Independent t test showed that score of the dimensions of coping strategies did not have statistically significant difference between intervention and control groups in pre-test stage ($P < 0.05$). This test showed statistically significant difference between two groups in post-test stage in terms of scores of the different dimensions of coping strategies ($P > 0.05$), except in dimensions of social support seeking and positive appraisal ($P > 0.05$).

Conclusions: Findings of this research indicated that the Roy's adaptation model-guided education improved majority of coping strategies in veterans with lower extremities amputation. It is advised the more intervention based on Roy's adaptation model for improving coping of the veterans with lower extremities amputation was implement.

Keywords: Amputation; Lower Extremities, Coping, Roy's Adaptation Model, Strategy, Veterans

3.18. IRAN-18: An Assessment of the Strengths and Weaknesses of Crisis Management in the Police Hospital From Administrators' Point of View

Saeed Reza Lotfi,¹ Shabbu Jafarzade,² Rahman Arefinia,³ and Alireza Hamid⁴

¹ Samen-al-Aemeh NAJA Hospital of Mashhad, IR Iran

E-mail: teb@police.ir

Background: Managing and reduction of disaster risk in the health care system has always been challenging. For security reasons, police hospitals play an essential role in these situations. The aim of this study is to determine strengths and weaknesses of crisis management in the police hospital.

Materials and Methods: This descriptive case study included a survey of 70 executives, staffs, supervisors, administrators and members of crises and disasters committee done in one of the police hospitals in which a maneuver had been performed. Data were collected using Disaster Management Questionnaire, consist of 36 items in three areas: before the crisis (green status), during the crisis (red status) and after the crisis (yellow status). Data were analyzed using SPSS software version 11.5.

Results: Results indicated that, from the perspective of managers, the highest and lowest average scores were in the post-crisis period (3.5 ± 0.75) and before the crisis (3.18 ± 0.72), respectively. In green status "quick and timely response of crisis management team" had the highest score and "observation and analysis of similar crises" and "flexibility of organization in times of crisis" had lowest scores. In red status highest and lowest scores had been given to "no conflict between members" and "lack of correct predictions and causing damages" respectively. In yellow status, "review the crisis management plan" had the highest and "the activation of knowledge management system and organizational learning" had the lowest scores.

Conclusions: Effective crisis management is composed of crisis management flexible planning, coordinating outside and inside of organization, organizing the forces and resources, good training and educating, and performing periodic maneuvers in hospitals. The best way to stabilize ideal conditions and strengthen weaknesses is to identify defects based on similar studies of crises, eliminating essential defects and reassess the organization readiness in health centers.

Keywords: Weaknesses; Strengths; Crisis Management; Police; Hospital

3.19. IRAN-19: Prehospital Management of Gunshot Patients at Major Trauma Care Centers: Exploring the Gaps in Patients Care

Ali Reza Khoshdel,¹ Amir Norouzpour,¹ Mohammad-Hadi Modaghegh,¹ and Gholam-Hossein Kazemzadeh¹

¹ Department of Epidemiology, Faculty of Medicine, AJA University of Medical Sciences, Tehran, IR Iran

E-mail: alikhoshdel@yahoo.com

Background: Prehospital management of gunshot-wounded (GW) patients influences injury-induced morbidity and mortality.

Objectives: To evaluate prehospital management to GW patients emphasizing the protocol of patient transfer to appropriate centers.

Patients and Methods: This prospective study, included all GW patients referred to four major, level-I hospitals in Mashhad, Iran. We evaluated demographic data, triage, transport vehicles of patients, hospitalization time and the outcome.

Results: There were 66 GW patients. The most affected body parts were extremities (60.6%, $n = 40$); 59% of cases ($n = 39$) were transferred to the hospitals with vehicles other than an ambulance. Furthermore, 77.3% of patients came to the hospitals directly from the site of event, and 22.7% of patients were referred from other medical centers. EMS action intervals from dispatchers to scene departure were not significantly different from established standards; however, arrival to hospital took longer than optimal standards. Additionally, time spent at emergency wards to stabilize vital signs

was significantly less in patients who were transported by EMS ambulances ($P = 0.01$), but not with private ambulances ($P = 0.47$). However, ambulance pre-hospital care was not associated with a shorter hospital stay. Injury Severity was the only determinant of hospital stay duration ($\beta = 0.36$, $P = 0.01$) in multivariate analysis.

Conclusions: GW was more frequent in extremities and the most patients were directly transferred from the accident site. EMS (but not private) ambulance transport improved patients' emergency care and standard time intervals were achieved by EMS; however more than a half of the cases were transferred by vehicles other than an ambulance. Nevertheless, ambulance transportation (either by EMS or by private ambulance) was not associated with a shorter hospital stay. This showed that upgrade of ambulance equipment and training of private ambulance personnel may be needed.

Keywords: Wounds; Gunshot; Triage; Emergency Medical Services; Wounds and Injuries; Iran

3.20. IRAN-20: Prevalence of Patent Foramen Ovale in Experienced Divers Using Trans-Esophageal Echocardiography

Babak Shekarchi¹

¹ Department of Radiology, Faculty of Medicine, AJA University of Medical Sciences, Tehran, IR Iran

Introduction: Prevalence of patent foramen ovale (PFO) varies with age and is reported to be 18% to 36%. Some studies have addressed the change in prevalence of PFO in divers over time. The aim of this study was to show the prevalence of PFO in a set of 18 professional military and commercial divers with at least 20 years of diving experience.

Materials and Methods: A group of 18 professional military divers (which all had a second occupation of commercial diving) without any history of cardiac illness were examined through trans-esophageal echocardiography. All divers had over 20 years of experience, with more than approximately 20000 hours of diving. Trans-esophageal echocardiography (TEE) was performed with a 5-MHZ phased multiple probe (Vivid 3, GE Medical Systems). After evaluation of the inter-atrial septum with and without color Doppler, two contrast studies were performed in each patient for definitive diagnosis of PFO. A right-to-left shunt was diagnosed if micro-bubbles appear in the left atrium within three cardiac cycles.

Results: Thirteen divers (72%) had PFO of different types (I or II). One of them was large and others were small. Eighty five percent of subjects (11 out of 13) of them had type I and the rest had type II right-to-left shunt.

Discussion: The prevalence of PFO in divers was more than its prevalence in general population and also, more than its prevalence in the population of 20 - 30 years old. The prevalence of PFO will be increased in professional divers over time.

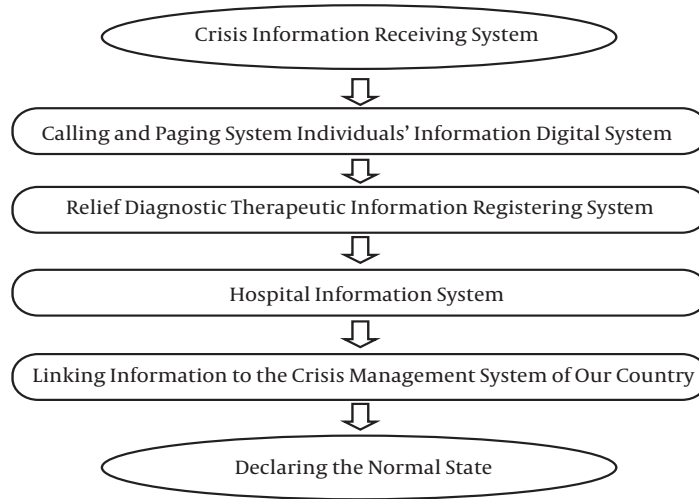


Figure 5. Suggested Model for Health Information System in Crisis

3.21. IRAN-21: Modeling the Information Management System of the Crisis Health Based on the Relief and Treatment Chain

Mikaeel Ebrahimi, Ahmad Amerioun, Reza Safdari, Shahram Tofiqi; Kazem Khalagi, Parviz Asadi, Karim Mar-

jani and Mohammadamin Shamsi

Having health information system is one of the main issues of crisis management. Drawing the relief, transfer and treatment chain and modeling health information system based on it is necessary for appropriate management of crisis, planning and orga-

nizing. Therefore, the main purpose of this research is modeling health information system based on the relief, transfer and treatment chain. Data were gathered by observation, semi-structured interviews and investigating documents and pictures and database formed by data gathering and a logical chain developed among evidences. Result showed that after the Varzaqan earthquake (with magnitude of 6.2 Richter), Kowsar field hospital informed and called all relief and therapeutic forces. In order to help internal crisis management, assessment team and relief forces were called and then entered quake-hit areas. A complete set of diagnostic, therapeutic and surgery proceedings presented to injured people. In the next stage, some patients and injured people should be transferred to the military and municipal hospitals, then, by coordinating with the hospital of Varzaqan, relief and transfer chain completed. After advanced therapeutic proceedings in the military and municipal hospitals, discharged patients deployed in the hospices for recovery proceedings. Modeling health information system was illustrated at Figure 8.

By deploying relief and transfer chain, field hospitals (related to the armed forces hospitals) play an effective and efficient role in covering relief, health and therapeutic proceedings for injured people. In this regard, for more coordination we should act according to the predetermined model.

Keywords: Unexpected Events; Field Hospital; Armed Forces; Crisis; Earthquake; Health Information System

3.22. IRAN-22: A review of Malaria Prevention and Control in War Areas

Farshad Najafipour,¹ Amir Norozi,^{2,*} and Milad Darejeh²

¹ Department of Epidemiology, AJA University of Medical Sciences, Tehran, IR Iran

² Health Insurance Research Center, Armed Forces Insurance Organization, Tehran, IR Iran

* Corresponding author: Amir Norozi, Health Insurance Research Center, Armed Forces Health Service Organization, Tehran, IR Iran. Tel: +98-2166733608, Fax: +98-2166726909, E-mail: Dr.A.Norozi@gmail.com

Soldiers are confronted with a variety of vector-borne threats and diseases in war areas. Among all threats Malaria holds important place as major health problem in potent tropical areas. Malaria control in war areas has been considered to be one of the most desirous and challenging goals of different armies. According to WHO the Integrated Vector Management could be considered as a solution to improve the efficacy, cost-effectiveness, ecological soundness and sustainability of malaria control. This review suggests that the introduction of IVM, have important consequences for malaria control in war areas, but also indicate that this would require expert trained units. The aim of this review is to survey the lit-

erature, up to November 10st, 2014, regarding malaria prevention and control efficacy with impact on war areas and military bases located in high risk regions. We searched PubMed, Springer, Elsevier, ScinceDirect and Willy Online for relevant papers. As vectors, mosquito species Anopheles were considered as the main subject. We reviewed a total of 43 publications.

Keywords: Malaria; Control; Treatment; War Areas

3.23. IRAN-23: Extremely Atrophic Mandible a Challenge for Dental Implant Rehabilitation

Farzad Fazilat,¹ and Sara Dehghan Khalili¹

¹ AJA University of Medical Sciences, Tehran, IR Iran

Patients with extremely atrophic mandibles are challenging cases for masticatory rehabilitation. Sever dimensional loss makes conventional bone augmentation techniques such as onlay bone grafts and sandwich grafts so difficult and unpredictable due to impaired vascular supply and sever decreasing soft tissue coverage.

Mandibular cribs harvested from cadavers in combination with autogenous cancellous bone graft can be a predictable solution for vertical and horizontal bone augmentation simultaneously for dental implant installation.

For new bone regeneration we need three essential elements: scaffold, osteoblasts and bone morphogenic proteins (BMP).

In this technique the mandibular crib works as a good scaffold which provides a porous structure for the osteoblasts harvested from the donor site of the graft iliac crest remains the optimal site for graft harvesting due to higher volume of BMP molecule, higher osteoblast population per cubic millimeter, ease of access and lower incidence of morbidity.

The mandibular crib filed with cancellous iliac bone graft is secured and fixed to the lower border of mandible. After 4 months latency dental implant installation with optimal lengths and diameter for long term function is achievable.

Three patients between 45 - 55 years old who has been lost their teeth, wearing dentures for about 20 - 30 years with maximum mandibular thickness between 5 - 7 mm were under gone bone regeneration surgery using mandibular crib in combination with iliac cancellous bone graft through a submandibular approach. After 4 month latency dental implants were installed through an intraoral incision. Masticatory restoration was performed by over denture prosthetic treatment. Five year follow up reveals good clinical results.

Keywords: Mandibular Crib; Iliac Graft; Implants

3.24. IRAN-24: Assessment of Hospital Readiness to Deal With Disaster Based on HEICS

Fatemeh Rahmati Najarkolaei,¹ Alireza Moeeni,² Abbas Ebadi,³ and Esmaeel Heidarano²

¹ Health Research Center, Baqiyatallah University of Medical Sciences, Tehran, IR Iran

² Faculty of Nursing, Baqiyatallah University of Medical Sciences, Tehran, IR Iran

³ Behavioral Sciences Research Center (BSRC), Nursing Faculty, Baqiyatallah University of Medical Sciences, Tehran, IR Iran

E-mail: fatemeh_rahmaty@yahoo.com

Introduction: Hospital Emergency Incident Command System (HEICS) is one of the most reliable and most popular organizations in crisis management during emergencies.

Objectives: This study aims to assess the level of readiness in responding to crisis in Besat Hospital in Tehran in the emergency and other selected sections.

Materials and Methods: This was an analytical, cross-sectional study conducted in 2013. The population under study was selected from the personnel in several units of the Besat military hospital

which includes: 1) the emergency, 2) the management, 3) the rescue and transport, 4) the camp (Security and Traffic), 5) the Information and Communication Technology (ICT), 6) the training, 7) the support, 8) the reception, 9) the human force. In this study, three instruments were used: unit evaluation check list, questionnaire, and maneuver check list.

Results: The overall mean score for the maneuver check list was 55.5%. The mean score for the questionnaire was 42.02 ± 8.62 . The unit evaluation check list had a score of 165 out of 244 points and a mean of 67.62%. After performing the maneuver, the performance of the hospital in evaluating and prioritizing patients for quick releases and tracking patients' conditions was reported as weak.

Discussion and Conclusions: The present study shows that the level of preparedness in Besat Hospital was moderate, which corresponds with the previous studies. In the future studies, the effect of increasing the preparedness of the training unit on the overall preparedness of the hospital at times of crisis should be investigated.

Keywords: Hospital; Crisis Intervention; Emergency Responders

3.25. IRAN-25: Triage of Nerve Agents: Management and Protocols

Mohammad Ali Khoshnevis,¹ Ali Rahmani,^{1,*} Jafar Aslani,² Yunes Panahi²

¹ Military Nursing Department, Faculty of Nursing, Baqiyatallah University of Medical Sciences, Tehran, IR Iran

² Chemical Research Injuries Center, Baqiyatallah University of Medical Sciences, Tehran, IR Iran

* Corresponding author: Ali Rahmani, Military Nursing Department, Faculty of Nursing, Baqiyatallah University of Medical Sciences, Tehran, IR Iran. E-mail: Rahmani4143@gmail.com

Introduction: One of the most important chemical gases is nerve agents that have been used during several

wars. Triage is the process of classification and prioritization of possible emergency lookouts. Medical teams of each military system are in charge of facilitating, supporting, and boosting capacities and strength of engaged military wards. There is no advanced triage system for nerve agents, until now. Several protocols of triage for chemical victims exist without any international standard. Rapid care, therapy and transport of victims are necessary.

Objectives: The objective of the systematic scientific literature review was to identify relevant of a unique triage system for victims of nerve agents.

Materials and Methods: We conducted a systematic review of studies that used clinical sign and symptoms of nerve warfare agents, primary treatments and transportation, also classification of patients were extracted according to literature. All related articles were reviewed. Subsequently, specialists of different disciplines were invited to discussing and get revising protocols.

Results: The systematic search of the scientific literature databases achieved including classification and required guidelines in the field and hospital after several meetings. At this guideline, Classification and selection of the colors in the scene are: Minimal (Green), Urgent (Red), Delayed (Yellow), Expectant (Black) and victims management in the field triage for Urgent class include: Decontamination if possible, Checking the airway, Atropine 4 mg every 5 minutes until symptoms of atropinization, complete management guideline related to type of class triage, presented in the full text article

Conclusions: Improved triage system suggests precise and/or combined dosage of drugs and treatments during field or hospitalization.

Keywords: Chemical Warfare; Nerve Agents; Triage; Guideline; Protocol

3.26. IRAN-26: Assess the Prevalence of Skin Diseases Among Workers of Open Vessels of Marine Corps

Farshad Nouri Nejad,* Mohammad Hossein Haghparvar, Mohammad Nobakht, Akbar Shahriari, Mohammad Shahidi, Shahrzad Badri and Reihaneh Mehregan

* Corresponding author: Farshad Nouri Nejad, Research Center of Tebe Darya, Marine Corps Force Behdari, Tehran, Tehran, IR Iran. Tel: +98-2177425023.

Introduction: A relatively common skin disease in people who works in the sea and exposure to heat, high humidity, wind and salt and because and lack of knowledge of skin hygiene, create the need to find the type of skin effects, the prevalence of diseases, methods of prevention and treatment. Apparently, the incidence of diseases is inevitable and however jobs in sea and beach has occupational consequences that they are accustomed or symbiotic to them. Decrease of prevalence and frequency is the only way of Preventive measures, by knowing the

amount of diseases frequency it is possible to have a suitable prediction for annually planning the type and doses of drug. But by the right strategy of prevention, this is possible to reduce prices.

Materials and Methods: This is a cross-sectional (prevalence) study. Data analysis method was done as consecutive sampling (Third zone staff floating Ndsa). By knowing that only 70% of dermatology diagnosis is acceptable (30% error), or (d), the confidence level was considered (95%) or (z); according to previous studies, skin diseases prevalence was considered 26% or (p), using the formula to estimate the sample size in qualitative traits, sample size was estimated at least 203 people.

$$\frac{Z^2P(1-P)}{d^2}$$

and the statistical community includes third region Ndsa floating population (those who were willing to cooperate in the project. But the number of samples was calculated in the formula). Method of data collection including all variables, response options and field test results obtained and completed from each construct also rendered in book form. The information achieved from vessels and structures were completed by web sites, catalogs and advertising and evaluated at the final assessment.

Results: 223 people have been participated as a volunteer in this project that all of them were male. The average age of healthy individuals were (31.8 4) and for patients were (30.4 4) that there were no statistical communication to the disease (PV > 0.5). The average working experience years in healthy individuals were (12.0 4) and in patients were (11.32 4) that there were no statistical communication to the disease (PV > 0.5). In terms of working times in a hot environment, 75.29% of healthy cases were less than 2 hours per day and 75.24% of patients were more than 3 hours per day that was statistically significant with PV < 0.001. As well as sun exposure times in healthy cases were 50% less than 2 hours per day and in patients were more than 3 hours per day that was statistically significant with PV < 0.05.

In terms of the status of bathing, in healthy people were 51.54% more than 4 times a week and in patients were 84.7% less than 3 times a week that was statistically significant with PV < 0.02. In other parameters like sports there were a clear connection between healthy and patients with PV < 0.5. In terms of consumption of fruits and vegetables, also there were a clear difference between healthy people with high consumption and patients with low consumption (PV < 0.05). In terms of smoking, in healthy people were 17.69% and in patients were 37.65% that was statistically significant with PV < 0.05. In terms of using sunscreen and moisturizers and about covering status, there weren't any relation and also. In terms of the history of complete or incomplete

treatment of skin disease, the highest treatment was for herpes (100%) and no treatment was observed in treatment of mole.

Discussion: There's not performed any study in Iran on the frequency of skin diseases in workers of marine vessels. So there's not any possibility of comparing it with similar cases. Working in hot environments and exposed to the sun according to effects of them on skin health, increase the prevalence of skin diseases.

Business and special mission with performing by persons, because of stressful nature of them and poor relative situation of bathing in these people, skin diseases can be intensify. The prevalence of skin disease in the population under study was 39.53% that was slightly higher than similar study that was performed by ministry of health in 8 provinces at 1993 - 94 (26%) which reflects the influence of heat and sunlight on the prevalence of skin diseases. (Average temperature of mahshahr is 4.8 degrees above the average temperature of Iran). The most common skin disease in this study was dermatitis and then dry skin which are known and associated with the sun and heat. There were no observation of Relationship between age and skin condition and work experience; in this study the prevalence of dermatitis was seen higher than total population of the country. Perhaps due to the stressful nature of the job and contacts with sea water and salt. The fungal disease outbreaks due to high moisture, heat and low bath is recommended. The interesting thing about gal was that both cases were soldier and it can be assumed that resting at barracks and the lack of personal hygiene can justify the transmit of disease.

3.27. IRAN-27: Effects of the Total Quality Management Implication on Patient Satisfaction in Emergency Department

Mohammad Hossein Lashkari,¹ Ali Reza Khoshdel,¹ and Saeed Arefanian,¹

¹ AJA University of Medical Sciences, Tehran, IR Iran

Objectives: To evaluate the effects of Total Quality Management (TQM) implication on patients' satisfaction in emergency ward.

Design: Patients' satisfaction was evaluated before and after TQM-based quality improvement process in emergency department by using a satisfaction survey questionnaire.

Setting: Besat General Hospital, Tehran, Iran. Participants: Patients who were admitted to the Emergency ward of Besat General Hospital in two periods of September-December 2009 and April-July 2011.

Interventions: According to the patient satisfaction questionnaire results and feedback, and based on TQM principles all the possible interventions were implicated after discussions with responsible teams and the managing staff during the 15 months of the satisfaction evaluation interval.

Results: The satisfaction level for physicians, nurses,

transporting and service personnel, and imaging staff has increased by 12.7%, 21.8%, 17.0%, and 14.1%, respectively ($P < 0.001$ for all). The overall satisfaction increased from 55.4% to 71.3% after the TQM application ($P < 0.001$).

Conclusions: Considering the low satisfaction level among Iranian patients about the emergency and health-care services we suggest that TQM can be a very effective solution in improving the health care service quality and increasing patients' satisfaction.

Keywords: Total Quality Management; Organization; Health Care; Satisfaction; Teamwork

3.28. IRAN-28: Prevalence and Metabolic Risk Factors of Non-alcoholic Fatty Liver Disease Among Army Personnel in Shiraz

Shahrokh Iravani,^{1,*} Ali Reza Khoshdel¹

¹ AJA Cancer Research Center (ACRC), AJA University of Medical Sciences, Tehran, IR Iran

* Correspondence: Shahrokh Iravani, AJA Cancer Research Center (ACRC), AJA University of Medical Sciences, Tehran, IR Iran. E-mail: Iravani.sh@gmail.com

Background and Aims: Non-alcoholic fatty liver disease (NAFLD) is a common causation of chronic liver disease worldwide; however, the prevalence of NAFLD is not well known and is estimated to be 20 - 30% in adult population of developed countries. Most NAFLD patients are asymptomatic and are occasionally diagnosed following abnormal biochemistry tests. The present survey was aimed to study prevalence and metabolic risk factors of NAFLD in a population of Iranian army personnel in Shiraz, south Iran.

Materials and Methods: This cross-sectional study was performed on 200 individuals of a military camp personnel. A baseline questionnaire was completed for each individual and other related data such as FBS, HDL, LDL, Triglyceride and liver enzymes measured by biochemical tests. All individuals surveyed for metabolic syndrome and liver examination by ultrasonography. Statistical analysis was performed using SPSS software and P values less than 0.05 considered significant.

Results: Ultrasonography assay confirmed NAFLD in 58 participants (29%). Mean age of NAFLD patients was 40.71 ± 6.84 and significantly higher than healthy individuals (37.07 ± 7.03) ($P = 0.001$). NAFLD patients showed significantly higher profiles in body mass index and plasma tri glycerides, Cholesterol and ALT ($P < 0.05$), however there was no significant difference on FBS, HDL, AST and ALP between healthy and NAFLD individuals ($P > 0.05$).

Conclusions: Our results show that NAFLD is highly prevalent in studied population and is commonly associated with elevated body mass index and inimical life style. Due to mean age of studied population, it can be concluded that NAFLD related NASH would be a common cause of advanced liver disorders in early future.

3.29. IRAN-29: Evaluation of Prehospital Emergency Actions Taken in Police Missions Injured Referred to the Police Hospital

Saeed Reza Lotfi,¹ Zahra Arab,¹ Shabbu Jafarzade,¹ Shamsi Ahmadian,¹ and Ali Kazemi¹

¹ Samen-al-Aemeh Hospital, Mashhad, IR Iran

E-mail: teb@police.ir

Background: Today, military medicine focuses on specialized approaches, ambulatory, resuscitation, pre-hospital stabilization of critically injured patients and support of pre-hospital policies. The purpose of this study is to assess the prehospital emergency actions taken in patients injured during NAJA missions and are referred to emergency ward of police hospital.

Materials and Methods: All military injured patients who were hospitalized from March 2011 to August 2012 in emergency ward of Samen-al-Aemeh NAJA hospital of Mashhad, were included in this descriptive-cross sectional study. Data collection was performed using checklist filled by medical documents of patients. Collected data were analyzed by SPSS software version 11.5.

Results: Total of 84 cases were included in this study (mean age: 25.7 ± 6.9 years). The mean duration between the injury and hospital arrival was minimum 3 and maximum 975 minutes. 59.5% of patient transports were performed by motor vehicle and medical team were present. 81% of them were in desired health condition. Gunshot was responsible for 45.2% of injuries. 57.1% of cases had received no pre-hospital care. Rate of pre-hospital cares was 55.6% in borderline areas and 44.8% for traumatic injuries.

Conclusions: Updated knowledge about medical care for war injuries is critical for suitable treatment and decrease in disability and mortality rate of these patients. So, considering the deficiencies in present prehospital policies, educations with the aim of improving the pre-hospital care is suggested. Further studies on present conditions compared to world standards can be helpful to achieve optimal prehospital care.

Keywords: Prehospital Medicine; Emergency; Injury; Trauma

3.30. IRAN-30: Patterns of Injury in the Wounded Sent to Hospital and the Regional Educational Needs of the Military Aid Workers First Responders

Sholeh Vatanparast,^{1,2,*} Mostafa Mohammadi,² Mahdi Ashayeri,² Adel Razeqifam,² and Mohammad Ali Vahdat³

¹ Trauma Centre, Baqiattallah University of Medical Sciences, Tehran, IR Iran

² Shahid Arefian Hospital, Urmia, IR Iran

³ Baqiattallah University, of Medical Sciences, Tehran, IR Iran

* Corresponding author: Sholeh Vatanparast, Trauma Centre, Baqiattallah University of Medical Sciences, Tehran, IR Iran. E-mail: sholevatanparast100@gmail.com

Aims: One of the important things in wars is the pres-

ence and effective efforts of military first responders. Undoubtedly, correct clinical decisions and the use of theoretical and practical knowledge can prevent many damages, maintain the spirit of the warriors, and reduce the complications. Analysis of the patterns of injury in the injured people can be done for identification of regional educational needs of the military first responders and other groups related to treatment of the injured.

Materials and Methods: In a descriptive and sectional retrospective analysis the archived documents of the injured sent to Arefian Hospital between 1992 and 2010 were studied- each year separately. The sampling was done randomly and medical records were studied using the Cochran formula. In this study the injury patterns in the injured were studied to identify the educational needs of the military surgeons. After categorizing the data, the statistical parameters of the variables like the mean ratio of variance percentage were mentioned and the data was analyzed by SPSS (19 PC version).

Results: The results showed that the most common injury pattern was of limbs injuries (%72.97) and next the head injuries (%23.15) and last the trunk injuries (%3.87). These were the main causes of the patterns of injury for the injured sent to Arefian hospital. In general, the first priority in patterns of injury in 18 years of studying the documents of injured people was the pattern of injury on limbs.

Discussion: The attempt for recognizing the injury patterns and special trainings for military first responders has special importance in mortality management in crises areas.

Keywords: Pattern of Injury; Educational Need; Injured; Military Aid Workers First Responder

3.31. IRAN-31: Minimal Intervention Dentistry in the Society of Armed Forces

Mohsen Amin-Sobhani, Babak Farzaneh,* Farzad Fazilat and Behzad Latifian

Faculty of Dentistry, Dental Research Center, AJA University of Medical Sciences, Tehran, IR Iran

By early 1990, researchers had changed the management of dental caries from the traditional surgical approach to a 'biological' or 'medical' approach.

Minimal Intervention Dentistry is a new and important concept that it should be considered for military personnel. The philosophy of 'Minimal Intervention Dentistry' (MID) was referred to preparing the smaller and more conservative cavities. The oral healthcare professionals must consider both individualized and population-based strategies for improving oral health.

This concept, therefore, is not only limited to the management of dental caries but is also appropriate for other areas of oral health; such as periodontology, oral rehabilitation and oral surgery and also endodontics. MID principles do not consider the dental caries as only an infectious disease but instead a behavioral disease with a bacterial component. For successful MID in the army, brushing, flossing, using mouthwashes and fluoride rinse should be taught to the army staff

and Duty military personnel and their families. Education is crucial. An individual at no time is free from dental caries or oral disease. The 'whole population' approach is suitable for the prevention of oral and dental diseases.



Figure 6. The Participation of Iranian female Academic Delegates was of Significant Interest in the Congress



Figure 7. Official Announcement of the Membership of IR Iran in ICMM in the General Assembly



Figure 8. The Meeting of Indonesian Steering and Organizing Committee with Iranian Team Representatives

At the end, if MID is to make an effect in supporting the purpose of 'Teeth for Life' for military staff and their families, it must be included in the dental curriculum. Also, the researchers must target toward the MID in the army

The medical exhibition organized on the occasion of the 41st ICMM World Congress on Military Medical, was inaugurated by the Vice-President of the Republic of Indonesia, Mr. Muhammad Jusuf KALLA.

College	First US	Delayed US	P Value
Sensitivity	36.6%	65.9%	0.015
Specificity	99.3%	99.3%	1
PPV	88.2%	93.1%	0.572
NPV	91.2%	95%	0.73



Figure 9. The 41st ICMM World Congress Witnessed Participation From More Than 80 Nations



Figure 10. The Chairman of the Organizing Committee for the Next ICMM World Congress in New Delhi, 2017, With two Iranian Team Representatives in the General Assembly