Evaluation Indexes of Military Hospitals From the Experts' Perspective: A Qualitative Study

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ABSTRACT

Given the importance of evaluation in an organization and considering the objectives and missions of military hospitals, we aimed to extract some indexes (in addition to common evaluation indexes) for use in evaluating military hospitals. This was an applied-type qualitative study. The participants were 15 health experts who were first chosen by a purposeful sampling, which was then continued by theoretical sampling. The data obtained were analyzed by using MAXQDA11 software and the content analysis method. After 290 obtained codes were analyzed, 17 indexes in 6 domains were extracted, including capacity development for crisis periods, equipment and facilities, training and research, passive defense, treatment, and services, from which 8 indexes were related to capacity development for crisis periods and equipment and facilities (4 indexes each), 3 indexes were related to services, and 6 indexes were related to training and research, passive defense, and treatment (2 indexes each). The results of the present research, as a supplement to current evaluation methods such as accreditation, can be used for the comprehensive evaluation of military hospitals. (*Disaster Med Public Health Preparedness*. 2015;0:1-6)

Key Words: military hospitals, disasters, disaster planning

Evaluating and measuring performance is one of the most important duties of managers in organizations.[1] Different criteria, principles, and attitudes are applied when performing this evaluation and measurement. Over time, these attitudes have changed.[2] From one point of view, the methods used to measure performance can be divided into traditional and modern methods. In traditional methods, evaluation performance is based on financial profit and loss. In modern approaches, however, these criteria are enhanced and other criteria are considered also.[3] Evaluation and performance measurement methods in the health area and especially hospitals have evolved gradually. For example, in Hammurabi rules, unsuccessful surgeries and their possible losses were compared to monetary values. Francis Clifton in 1732 and then Florence Nightingale in the 19th century analyzed and evaluated hospitals' performance by gathering data related to patients.[4] No fixed approach exists for evaluating organizations and institutes, and a specific approach should be selected that takes into account an organization's goals and even different conditions.[5] However, integral approaches are more efficient and useful for evaluation.[6]

The World Health Organization has suggested 5 methods for evaluating hospitals: inspection, surveys of patients' experiences, third-party assessment, statistical indicators, and internal assessment.[7] In most countries, the inspection method is used to survey hospital performance indexes such as health performance and medical equipment. In some countries, infection control and blood transmission are also evaluated in this area.[8] This model is mostly used in modern hospitals and in the private sector, however. Some problems with this method include that it is hard to use and in need of updating. Furthermore, because this model is implemented by local governments, it cannot be generalized globally and its results do not include employees and patients.[9,10] In the surveys of patients' experiences model, the focus is on health training, patient well-being, continuous serving, settling the complaints, and patient satisfaction. Despite several advantages of this model and its reliability for patients and society, its methodology is weak and focuses on clinical and managerial check lists. Therefore, governments do not release the results to the public.[11] The third-party evaluation model includes ISO standards, peer reviews, and accreditation. Nowadays, in most countries, accreditation is voluntarily implemented by private companies.[12] The disadvantages of third-party evaluation include the use of raw data and nonguaranteed services.[13] Many studies have been conducted about accreditation in

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most countries.[14–17] However, some studies have not obtained clear results about the effect of accreditation on improving quality in hospitals,[17] and implementing this model results in increasing bureaucracy in hospitals.[18] In some studies, however, the results show the improvement of quality in hospitals and clinics.[19,20]

All of the mentioned models just partially evaluate hospitals' performance (especially clinical and qualitative performance) and do not consider other aspects such as policies or work design and thus are considered incomplete methods. The World Health Organization also considering actors' goals and the use of integral models in evaluating hospitals.[21] Military hospitals in war and peace play an important role in the health system and in saving patients.[20,21] In practice, however, the goals underlying the founding of military hospitals differ from those of nonmilitary hospitals.[22] Furthermore, although accreditation is not necessary for military hospitals (however, in some countries like the United States military hospitals are accredited voluntarily and serve public people),[23] the evaluation system for both kinds of hospitals is the same and there is no distinct system for assessing military hospitals.[24]

Therefore, in this study, via a qualification point of view method and by using the opinions and experiences of those who have the background of working in a military hospital, we aimed to formulate appropriate indexes for evaluating military hospitals. Because military hospitals in each country are based on military issues related to that country, and there are no sufficient sources for their evaluation and assessment indexes, a qualitative approach was chosen. With the use of such a method, we can acquire a proper understanding of those who are working in this domain and possible issues and problems can be extracted.[21]

METHODS

This study was a part of a more comprehensive research study that was designed and conducted by a qualitative[22] and content analysis method.[23] The study sampling was of the purposeful sampling type[24] and was conducted among experts in the military health area who had at least an MA degree and a minimum of 10 years of work experience in military hospitals. Sampling continued until data saturation. Semi-structured interviews[25] were conducted to collect the required data. All interviews were done according to appointments made in advance with interviewees in their workplace. Interviews were recorded with permission. A total of 500 minutes of interviews were obtained; the average length of each interview was 50 min. Interviews continued up to the stage of data saturation and lack of access to new information.

All interviews were used after they had been listened to several times. The interview data were analyzed by use of Maxqda10 software[25] by the content analysis approach in which semantic units were determined and then relevant and similar codes were put in one category. The codes were compared internationally and placed in related categories. This procedure was repeated for categories, and the formed categories were also compared internationally on the basis of their similarities and differences. Finally, codes and subcodes were compiled.[26] In order to confirm rigor, data trustworthiness, and study credibility, peer-check and check-member methods were used.[27] In this regard, the results of data analysis and classification were confirmed by two professors. Furthermore, one experienced expert also commented on our qualitative research. In addition, the results of the analyses and coding were presented to 3 interviewees, who confirmed the results. Furthermore, because this study was part of a PhD thesis, the supervisors and advisors carefully controlled all stages. This supervision resulted in transferability and conformability of the present study.[28]

RESULTS

A total of 290 primary concepts were classified into 6 main categories and 17 subcategories, which are shown in Table 1. Examples of the statements that resulted in the extraction of these codes are presented for each category.

Capacity Building

In the scope of capacity building, most of the codes obtained were related to the crisis period and its subbranches, because most interviewees believed that the main mission of military hospitals is related to the crisis period and not to peacetime. In fact, they expected the military hospital's performance at peacetime to build on required capacities for the crisis time. For example, one interviewee said, "Military hospitals should not provide services which can be bought, but instead they should go toward services and specialties which are more efficient in the crisis period." Another interviewee indicated, "Military hospitals should provide specialties and departments which are useful in crises such as war and earthquake." About the percentage of elective patients, several of the interviewees felt that the evaluation criteria in military hospitals should be for those nonelective and complex surgeries that may happen at the time of crisis, such as brain and nerve surgeries or other traumas. One interviewee said, "Most patients who come here are those [who] come for elective treatments and cesarean and have social security insurance, so it seems to be a kind of deviation from the goal of establishing military hospitals." In this regard another interviewee pointed out, "We should evaluate a military hospital with indexes which are useful in the crisis period; for example, we should think if surgeries such as hemorrhoids and cesarean in the military hospitals are efficient in the crisis or no, since we can do these active surgeries in non-military hospitals too. I think, we should do those surgeries related to the crisis period (such as trauma surgery)." In the scope of physical development, one of the participants indicated, "When an earthquake or war occurs,

TABLE 1

The 6 Main Categories and 17 Subcategories of the Primary Concepts Extracted

Capacity Building
1. Having departments and specialization related to the crisis and after it (trauma and burn, nerves and psychiatry, etc)
2. Percentage of nonelective patients and related to the crisis (such as brain and nerves, reconstructive surgeries, etc)
3. Physical development potential of departments related to the crisis at the time of crisis
4. Holding maneuvers (number and time)

Equipment and Facilities
1. Having field hospitals and charts for the crisis period
2. Logistics and support, transportation power
3. Telemedicine
4. Technological power (communications in the crisis, etc)

Training and Research
1. Training
2. Studies related to treatment of the armed forces

Passive Defense
1. Spaces
2. Facilities (such as water source, electricity, etc)

Treatment
1. Score of accreditation or other evaluation models
2. Special score of departments related to the crisis, such as emergency, traumatic, burn, and psychiatry departments

Services
1. Percentage of serving armed forces and their family
2. Percentage of serving needy people
3. Lack of focus on financial issues

all hospitals and especially military ones should be able to admit a large number of emergency patients." In the scope of maneuver, two of them said, "We should train the personnel not to be confused in these cases. We should hold more maneuver[s] for physicians and nurses, because they are more important. We should put them in stressful situations. If a military hospital complies [with] a comprehensive calendar for continuous training and maneuver, the problem of unpreparedness will be solved."

Equipment and Facilities

Equipment and facilities were two obtained codes that could increase military hospitals' efficiency in the crisis period. In this regard, some interviewees said, "I think a military hospital at least should have one equipped field hospital." Another interviewee said, "In proportion to their bed[s], military hospitals should have field hospitals, for example, if a hospital has 100 beds, it needs 1 field hospital." In the scope of having transportation equipment, one interviewee said, "Discharge-chain should be designed; we should have a compiled plan from the frontline to the Tehran subspecialty hospitals. If a soldier [is] injured, the ground force rescuer should go and dress his wound and transfer him to the field hospital. Until arriving to a hospital located in the city, the patient should pass several stages." Another respondent added, "When equipment and facilities are more powerful and better—in the scope of diagnosis, treatment or transfer—obtained results are better too. When an earthquake occurs, we need fast transportation and equipped ambulances for transferring and treating injured people." In the scope of maneuvers, another interviewee added, "Holding these maneuvers needs a series of equipment and tools and without them holding is not possible. For example, lack of fast and secure transportation facilities for transferring patients (such as equipped aerial, ground, or marine ambulances) and field hospitals can cause important problems. Therefore, these maneuvers help individuals to prepare their minds." In the other scope of equipment and facilities, telemedicine, one of the interviewees said, "I think telemedicine is so efficient at the time of crisis. Nowadays, telemedicine is even considered in nonmilitary hospitals. In my idea, having telemedicine equipment and a facility in military hospitals is much more important than [in] nonmilitary ones." Or another interviewee indicated, "If nonmilitary hospitals are equipped with telemedicine, they can rescue more people." In the last scope of equipment and facilities, technological power, one of the respondents said, "In modern wars, using alternative tools such as wireless equipment is as important as using modern technology. If our communicational power interrupts, we should have alternative equipment." Another interviewee said, "Speed is the base of technologic power; military hospitals should have advanced technologic power. Consequently, these hospitals can increase their maneuver and fast response power."

Training and Research

We can divide the training and research scope into two dimensions. In the scope of training, besides the training

considered for nonmilitary hospitals, additional training should also be considered that is generally related to the dimension of modern wars. In their responses, interviewees considered this aspect of training. For example, "We think dealing with nuclear materials, chemical and microbial explosions are some problems which threaten our security. Well! In this case, we need special trainings; it means that a group prepared for this action should be trained." Another respondent said, "One of the related issues is biologic war, which is based on the modern and new produced and used weapons. Most of [the] viral diseases such as bovine spongiform encephalopathy, avian or porcine influenza, are signs of biologic war. Like all armies, we should think about these issues too." Concerning research dimension, one interviewee stated, "Another point that now came to my mind is that some studies because of being confidential should be conducted in confidential and military centers such as military hospitals and other health centers such as military research center[s] and it is so important." Another interviewee said, "Furthermore, in developed countries there is another aspect, i.e., military research. It means military research necessitates armed forces have military hospitals. For example, Harvard hospital in the USA is a military hospital, but mostly medical studies are conducted there. We have some military research indices that can't be followed in research centers of universities; they should be followed in military domains with perfect protection."

Passive Defense

The passive defense index includes all issues related to civil defense in crisis or events. Because military hospitals are more secure, VIPs from the country or province and other individuals whose security and protection is very important (such as murderers and other dangerous people) should be treated in military hospitals. Therefore, this dimension should be considered in the process of constructing military hospitals. About passive defense, one of the interviewees said, "We have some individuals who are so prominent in terms of military actions and even they are authorities of the country, suppose if a minister or a president gets sick, the best place for treating him is a military hospital. If you recall, for example, when the USA president was assassinated, despite [there] being lots of large and equipped hospitals, he was taken to the military hospital." Another interviewee said, "Information of military personnel is different from the others'; information about injured people is so important from the security point of view and disclosing this information creates some problems for the country. In the Holy Defense period, when our injured soldiers were distributed in hospitals around the country and there was no one around them, we were hurt. Therefore, we need a place for organizing our war wounded and injured." Another respondent pointed out, "Besides, we have some security patients and injured people who need to be kept in the places under the authority of armed forces, and because of this, we cannot take them to the public hospitals, where we do not know the personnel and their security is not confirmed. In this regard we should define some specific places for them in our places."

Treatment

Obviously, the system of accreditation that is now dominant in the hospitals of most countries (including Iran) evaluates qualitative aspects of treatment. In other words, most interviewees pointed out that the accreditation system is necessary but not enough. Of course, they argued that departments that are so important during the crisis period (such as trauma and emergency departments) should be considered more in the accreditation system of military hospitals. For example, "In the accreditation system, only some qualitative aspects of treatment are considered, which are necessary but not enough and most of them are software aspects." Another interviewee said, "Since evaluation and accreditation systems were sampled from foreign samples, practically, they are suitable for treatment issues but not for other aspects." Moreover, and interviewee said, "Military forces should be powerful and healthy. Therefore, considering religious and human issues, military hospitals should serve in the highest technical, security, and quality levels and respect patients' rights." Another one said, "[The] trauma department and its belongings which start from emergency to other departments such as trauma, ICU, and departments related to the modern wars and its dimensions should be evaluated in the evaluation system more carefully."

Services

In the scope of services, which can be divided into two areas of serving the armed forces and their families and serving the poor and vulnerable people, between which serving armed forces and their families is more important, we mention the following comments: "For example, when a military force goes to a mission, he should not be worried about his wife and children. Therefore, for serving these individuals, especially when they are kept in organizational houses, we need these hospitals." Another interviewee commented, "Of course, I don't mean that we should only serve armed forces! No! I say serving others (such as poor and needy people) is so good, but it is good when we use our excess service for them and it is wrong if our forces go to another hospital and receive their services!" Another interviewee said, "One dimension of military forces missions is helping deprived areas, which is called internal deepening." Moreover, another one pointed out, "Another reason for necessity of constructing military hospitals is establishing reliable and secure places for treating military families and increasing armed forces' mental health. Military forces should not have any concern (whether at the time of peace or crisis) about their families' diseases or the possibility of delay in treating diseases in other hospitals of the country." From the perspective of experts in the serving dimension, one of the evaluation dimensions of military hospitals is "not being focused on financial issues," because

the experts believed that focus on financial issues results in hospitals' deviation from their main mission in the crisis period. For example, two interviewees noted, "A military hospital should not compete with a private hospital for surviving; otherwise, their mission goal will deviate and hospitals will go toward elective patients" and "Now, in military hospitals, most of [the] patients have other insurance than armed forces' (especially complementary insurances) and authorities should pay enough attention to this issue."

DISCUSSION

Military hospitals are a part of a health system[29] that serves people during war and peace.[30] In addition to responsibilities taken by all hospitals, these hospitals have additional tasks and responsibilities.[31] There are different methods for assessment of organizations.[32] There are also several methods for assessment of health-therapeutic organizations.[33] The most important model used for hospital assessment throughout the world is the accreditation model.[34] It is based on quality and patient safety.[35] Each organization should be assessed by its goals, and the most important goal of constructing military hospitals is their usage during war and crises,[36] which is consistent with the findings of this study.

In addition to the 6 main axes and 17 extracted indexes, the statements related to crisis had the most iteration. If we adapt these indexes with the axes of accreditation, we find that only 2 or 3 of the indexes obtained in this study are in the domain of accreditation; thus, there are other more important indexes. On the other hand, the effect of accreditation on quality is not concrete, and it cannot be definitely said that hospitals where accreditation has been implemented offer services with higher quality.[17] Furthermore, participants in this study also confirmed implementation of accreditation in such hospitals but they did not accept it as a perfect model for evaluating military hospitals. Considering the findings of this study, if a military hospital, whose most important responsibility is to build capacity during crises and to serve armed forces' families, takes the highest rank in current assessment models, this issue alone will not be enough, because there is not much information (except in some cases) available on how to assess military hospitals.

CONCLUSIONS

Considering that the goals of military hospitals differ from those of nonmilitary hospitals, current assessment models such as accreditation are not sufficient for assessment of military hospitals. To assess such hospitals, other domains such as building capacity during crisis, serving armed forces' families, and lack of concentration on financial issues should be given attention in addition to existing domains for accreditation. The results obtained from this research can be used to complement current assessment methods and comprehensively evaluate military hospitals.

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