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Key Factors in Hospital Crisis Response- An Example of Violence in Emergency Medicine

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ABSTRACT The medical personnel has to particularly pay attention to the treatment processes, including medication, attitudes, and interaction, as a lot of violence in emergency medicine shows no absolute relationship with medical profession. However, finding out the sign of violence in emergency medicine in advance to further reduce the occurrence of violence in emergency medicine is a favorable approach. The nurses, doctors, and the public in emergency rooms of Kaohsiung Veterans General Hospital are investigated in this study. Total 300 copies of questionnaires are distributed, and 176 valid copies are retrieved, with the retrieval rate 59ÿ. The research results show the top five indicators, among 12 evaluation indicators, appear Judgment Competence, Afterward Disposal, Potential Crisis, Decisive Management, and Command and Dispatch. Some suggestions are proposed in the conclusion in this study, expecting to assist in the worry of violence in emergency medicine in hospitals.

INTRODUCTION

Since the practice of national health insurance, such a payment-by-quantity method largely reduces the public burden of medical expenses. Nevertheless, a lot of hospitals provide the public with super-normal medical resources to increase the income for survival. The growth of services, therefore, can hardly be estimated for the budget that a large amount of deficits are caused for National Health Insurance Administration. In order to cope with such a large amount of deficits and effectively utilizes medical resources, National Health Insurance Administration promotes the payment with global budget to reduce loss, and hospitals are expected to reduce the waste of medical resources by decreasing the frequency of patients seeking healthcare and drugs. Different form the past idea of more patients seeking healthcare and drugs, it would result in the perception difference between hospitals and patients in the treatment process, and the patients, therefore, would regard the medical quality being reduced. It is regarded as a potential factor in medical malpractice. Although, medical malpractice appeared everywhere in the world, the solutions were distinct; there were special medical malpractice institutions constantly discussing and improving medical malpractice to make complete insurance systems and solve medical malpractice problems, such as The Joint Commission on Accreditation of Health Care Organization (JCAHO). Apparently, the emphasis of medical malpractice is a global trend. Nonetheless, there are merely some regulations in Civil Code. Comparatively, it needs to be reinforced. It would be late to deal with disputes after the occurrence of medical malpractice. Prevention therefore could reduce unnecessary waste and expenses. Having, further, analyzed and organized the medical process, it is found that similarities seem to exist in medical malpractice as well as the signs and reasons. Further, the constantly promoting educational standard has the public relatively enhance the requirements for quality, especially in emergency departments. Medical personnel, therefore, has to pay extra attention to the treatment process, including medication, attitudes, and interaction, to reduce the possibilities of medical malpractice. Critical incidents in emergency departments are relatively important that the factors in hospital Crisis Response, with violence in emergency medicine as the example, are discussed in this study.

Literature Review

Crisis Management

Ferguson et al. (2012) defined crisis as an event bursting without any alerts and causing serious loss of human life and property that a decision-maker had to make decisions and take

actions in short period of time in order to reduce losses. Bora et al. (2010) pointed out crisis as certain situations or events in a governmental organization or society bursting without any alerts, which could threaten the survival and development of the nation or result in serious losses of human life and property or other unfavorable results, forcing a decision-maker to make decisions and take actions in extremely short period of time to reduce the damage or loss down to the minimum (Simmons 2014). Summing up, the above points of view, crisis is an uncontrollable situation bursting without being noticed or being ignored; such a situation could cause the loss of human property and life that a decision-maker of an organization or government has to stabilize such impact in short period of time to prevent the crisis from spreading.

Harwati (2013) regarded crisis management as a long-term plan and the dynamic process of constant learning and adaptation when an organization tried to avoid or reduce the serious threat caused by the crisis; in other words, it could be the management measure or strategy coping with crises. Ciecro et al. (2010) also referred crisis management to the short-term responses or long-term planning of an organization to reduce the threat resulted from crises as well as the dynamic adjusting process with constant learning and feedback. Jaques (2010) pointed out crisis management as the process of planned, continuous, and dynamic crisis management. That is, a governmental organization or institution, aiming at potential or contemporary crises, took a serious of coping measures, including organization, order, control, negotiation, planning, encourage, and communication, before, during, and after an incident with scientific methods, and constantly revises and adjusts with information feedback to cope with the urgency, threat, and uncertainty of crises so as to effectively prevent from, deal with, and dissolve the crises and even eliminate the crises so that the governmental institution or organization could rapidly return normal operation. Veil (2011) explained the purpose of crisis management as to overcome the psychological obstacles of "unexpected events" so as to be ready for facing the worse conditions. Schraagen et al. (2010) mentioned that not getting ready for a crisis was the major factor in worsening crises. Every crisis could be well handled when getting ready for it (Brenner et al. 2012; Constantinescu and Constantinescu 2012). Concluding such definitions of crisis management, it stresses on the evaluation of problems in Crisis Response and the revision of disaster response plan after the recovery of crisis in order to keep a dynamic cycle.

Crisis Response to Violence in Emergency Medicine

Becker et al. (2010) regarded Crisis Response to violence in emergency medicine as the coping measures taken after the occurrence of violence in emergency medicine, which focused on the afterward intervention. In other words, not until the occurrence of violence in emergency medicine would effective strategies aiming at the situation be developed to eliminate violence in emergency medicine or reduce harm. It was different from the prevention and the handling during and after crises in crisis management. Ghalandarpoorattar et al. (2012) explained Crisis Response to violence in emergency medicine as emergency room managers applying various resources to dissolve the damage of violence in emergency medicine to the public in the shortest time, when facing the critical time of the public life and property being harmed during violence in emergency medicine.

Brinkman et al. (2011) considered Crisis Response to violence in emergency medicine as the resultant force composed of the mutual contact and function of various components of force. Such a concept is utilized in this study, and the dimensions contain, Insight Competence, Quick Response, Organization and Coordination Competence, and Random Intervention (Von 2010).

(1) Insight Competence refers to the competence of a leader timely discovering inclined and potential crises around emergency rooms and being able to accurately find out and predict the essence and development. Critical incidents of violence in emergency medicine show the processes of brewing, occurring, and developing that some unaware clues would be presented. A basic-level leader should be good at catching such emerging phenomena and mastering the true information with conscientious analyses for the thought and work preparation to cope with sudden critical incidents of violence in emergency medicine (Kim 2011).
(2) Quick Response indicates the competence of a leader rapidly collecting relevant information and making decisions for actions when facing critical incidents of violence in emergency medicine. Sudden critical in-

cidents of violence in emergency medicine happen fast without any postpone and delay. In face of critical incidents of violence in emergency medicine, a basic-level leader could effectively control the situation and dissolve the incidents by rapid responses, coping with fast movements, and rapidly investigating the cause of such sudden critical incidents of violence in emergency medicine with decisive management (Parker et al. 2010).

(3) Organization and Coordination Competence refers to the competence of a leader correctly dealing with various relations and organizing and coordinating distinct power to form the resultant force for coping with sudden critical incidents of violence in emergency medicine. Sudden critical incidents of violence in emergency medicine often involve in diverse interest relations and distinct deep secondary contradictory accumulated for long period of time. To deal with sudden critical incidents of violence in emergency medicine, a basic-level leader has to present higher Organization and Coordination Competence to well develop the resources of manpower, materials, and finance for closely connecting various measures to be highly efficiently and orderly proceeded (Mor and Rabinovich-Einy 2012).

(4) Random Intervention indicated the competence of a leader flexibly handling and dissolving sudden critical incidents of violence in emergency medicine. The factors in sudden critical incidents of violence in emergency medicine appear from multiple aspects that a basic-level leader needs to combine the principles with flexibility, insist on the principles, and be good at flexibly dealing with the special situations of sudden critical incidents of violence in emergency medicine in order to timely dissolve the crises by controlling the development (Prinz 2011).

RESEARCH DESIGN AND METHODS

Delphi Method

The ANP criteria are established according to Delphi Method, with which, also called expert investigation, the problems are sent to experts through mails to ask for the opinions, which are collected and organized as the comprehensive opinions. Such comprehensive opinions and predicted problems are returned to the experts for further opinions. The experts revise the original opinions based on the comprehensive opinions that are further collected. Repeating such processes for several times, a more consistent prediction is gradually acquired.

Based on the system program of Delphi Method (Kim and Aktan 2014), the opinions are given anonymously, where the experts do not discuss with each other horizontally, but merely contact with the researcher. Through various times of investigation, the problems are repeatedly requested, concluded, and revised, and the consistent opinions are finally collected as the prediction. Such an approach presents broad representative and is more reliable.

Analytic Network Process

Analytic Network Process (ANP) is extended from Analytic Hierarchy Process (AHP). Saaty (1996) proposed ANP to cope with lots of decision problems in real societies, which could not be denoted with structural AHP because of the network relationship existing in the upper, middle, and lower levels, rather than simple top-down linear relationship in real situations. Saaty added AHP and feedback into ANP to replace the hierarchy proposed by McGraw-Hill in *The Analytic Hierarchy Process* in 1980 with interpretations; such two could systematically make decisions. Further, the major difference between AHP and ANP appears on the former being a linear hierarchical structure, while the latter being nonlinear. ANP shows dependency and feedback and calculates the weight with super matrix. From the data of past literature, most people reveal mutually dependent relationship on affairs or principles related to people. Accordingly, ANP is considered more appropriate and better conformity to the practical demands than AHP for this study.

Establishment of Evaluation Indicator

The questionnaire is sent to the experts in different fields with email. The first feedback from the experts is calculated the considered items for Crisis Response. Such factors with similar properties are classified into a category and sent back to the experts for further opinions. Such processes are preceded through e-mail for several times to acquire the primary categories. All

experts are called for the meeting to make the key factors in hospital Crisis Response. Such key factors are regarded as the dimensions of ANP, and the correspondent categories are taken as the criteria for an ANP questionnaire. Figure 1 displays the research framework revised with Delphi Method in this study.

Definition of Evaluation Indicator

(1) ***Potential Crisis:*** The competence of timely discovering inclined and potential problems and being able to accurately find out and predict the essence and development.

(2) ***Master of Information:*** Being good at catching emerging phenomena and mastering true information for conscientious analyses.

(3) ***Crisis Preparation:*** After mastering true information for conscientious analyses, thoughts and work corresponding to sudden critical incidents are prepared.

(4) ***Rapid Response:*** The competence of rapidly collecting relevant information, making decisions, and taking actions in face of sudden critical incidents.

(5) ***Judgment Competence:*** To rapidly collect relevant information and investigate the cause of sudden critical incidents and the development for accurate solution.

(6) ***Decisive Management:*** Allowing effectively controlling the situation and dissolving crises.

(7) ***Command and Dispatch:*** The competence of response measures of an organization.

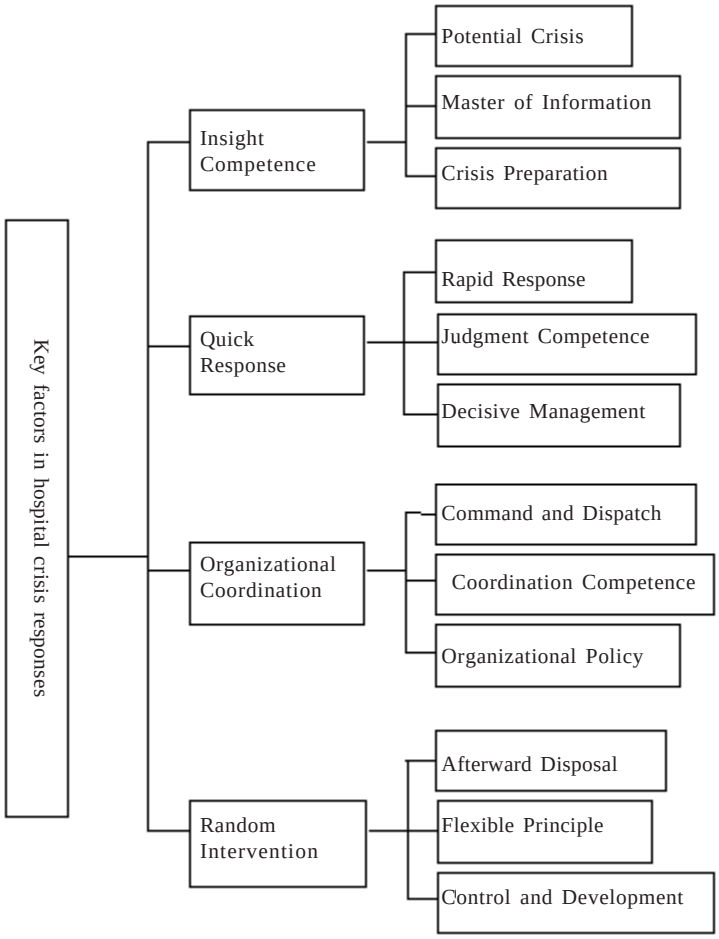

Fig. 1. Research framework

(8) Coordination Competence: The competence of coordinating different power to thoroughly develop the resources of manpower, materials, and finance and form the resultant force for coping with sudden critical incidents.

(9) Organizational Policy: Presenting the scheme to inspect and update crisis management plans at different levels.

(10) Afterward Disposal: Well arrangement with afterward disposal as a key in dealing with sudden critical incidents.

(11) Flexible Principle: In face of sudden critical incidents, a leader has to combine the principles with flexibility, insist on the principles, and be good at flexibly dealing with the special situation.

(12) Control and Development: Aiming at controlling the situation to timely dissolve crises.

Research Subject

Based on reinforcing the healthcare for the public in southern areas, enhancing medicine development, and promoting medical standards, the government established the "preparatory office of Kaohsiung office" of Taipei Veterans General Hospital in September 1984, which was listed in one of 14 major constructions. It was then, restructured as Kaohsiung Veterans General Hospital on July 1st in 1993, when it was independently operated formally. Since then, it has been affirmed by the public and is the sole public medical center in Kaohsiung and Pingtung areas. The nurses, doctors, and the public in emergency departments of Kaohsiung Veterans General Hospital are studied. Total 300 copies of questionnaires are distributed, and 176 valid copies are retrieved, with the retrieval rate 59%.

DISCUSSION

With ANP, the collected expert questionnaires were tested the pairwise comparison matrix passing the consistency test (C.I.f"0.1, C.R.f"0.1) in order to confirm the validity of the questionnaires. Furthermore, Super Decisions was applied to multiplying the weights of the same elements in the un-weighted super matrix by the weights of relevant dimensions so as to normalize the column vector of super matrix. When the sum of column vectors was equal to 1, it was a "weighted super matrix", which was proceeded power algorithm for several times till the column values being consistent and the sum of column vectors equal to 1. The convergent "Limit-super matrix" was then acquired (Table 1). It also presented the entire super matrix was getting stable.

The total weight of the factors in hospital Crisis Response was acquired with questionnaire survey (Table 1). The following conclusions were stated.

Among the evaluation dimensions in Hierarchy 2, Quick Response, weighted 0.347, was mostly emphasized, about 34.7% of total weight, followed by Random Intervention (weighted 0.283), Insight Competence (weighted 0.216), and Organization and Coordination Competence (weighted 0.154). The survey showed that Quick Response was mostly emphasized factor in hospital Crisis Response.

Among the evaluation indicators in Hierarchy 3, the hierarchical weights were ordered as following.

Table 1: Total weight of hospital crisis response

Dimension	*Hierarchy 2 weight*	*Hierarchy 2 order*	*Indicator*	*Total weight*	*Total order*
Insight Competence	0.216	3	Potential crisis	0.108	3
			Master of information	0.084	6
			Crisis preparation	0.056	10
Quick Response	0.347	1	Rapid Response	0.078	7
			Judgment competence	0.147	1
			Decisive management	0.096	4
Organization and Coordination Competence	0.154	4	Command and dispatch	0.091	5
			Coordination competence	0.024	12
			Organizational policy	0.067	9
Random Intervention	0.283	2	Afterward disposal	0.129	2
			Flexible principle	0.048	11
			Control and development	0.072	8

1. The order of evaluation indicators in Insight Competence appeared Potential Crisis, Master of Information, and Crisis Preparation.
2. The order of evaluation indicators in Quick Response revealed Judgment Competence, Decisive Management, and Rapid Response.
3. The order of evaluation indicators in Organization and Coordination Competence showed Command and Dispatch, Organizational Policy, and Coordination Competence.
4. The order of evaluation indicators in Random Intervention appeared Afterward Disposal, Control and Development, and Flexible Principle.

CONCLUSION

According to the empirical analyses, the following conclusions are proposed in the present study, expecting to provide definite guidance and directions for hospital Crisis Response.

By organizing the total weight of the key success factors in hospital Crisis Response, the top five indicators, among 12 evaluation indicators, are Judgment Competence, Afterward Disposal, Potential Crisis, Decisive Management, and Command and Dispatch.

From the above analyses, the solution for domestic violence in emergency medicine still focuses on afterward intervention. Modern medical services have been gradually integrated with Customer Relationship Management that high-quality medical services have become the common requirements of patients. A lot of violence in emergency medicine indeed does not reveal absolute relationship with medical profession. The disputes could be predicted or diagnosed that it would be a good way to reduce the number of violence in emergency medicine times by finding out the signs in advance.

RECOMMENDATIONS

Aiming at the research results, the following suggestions are proposed in this study.

1. ***Making Plans in Advance:*** The basic levels in a hospital should pay more attention to various possible critical incidents of violence in emergency medicine for the collection, analyses, prediction, warning, and report so as to really get well prepared. Meanwhile, contingency plans aiming at violence in emergency medicine should be made in order to reduce improper use of resources or waste resulted from chaos and to enhance the efficiency of contingent responses.
2. ***Making Prompt Decisions to Control the Situation:*** Being "prompt" and "decisive" is extremely important for dealing with sudden critical incidents of violence in emergency medicine. Promptly controlling the situation is considered as the fundamental requirement to prevent the situation from expanding. Having this, the basic-level leaders in hospitals should make prompt decisions with sensible and calm attitudes when facing crises of violence in emergency medicine, rapidly find out the situation, take actions, and intervene, as well as firmly control the development of situations with measures and solutions.
3. ***Calmly Analyzing the Property:*** After controlling the situation of violence in emergency medicine, a hospital leader has to observe the development, understand the destruction degree, broadly listen to the responses and opinions of participants and witnesses, or observe in secret, legally collect and master the situation and trace, and calmly analyze and comprehend the relevant information to make the solution for violence in emergency medicine.
4. ***Organization and Coordination:*** In face of violence in emergency medicine, a hospital leader should immediately gather existing resources of manpower, materials, and finance from the basic levels, promptly make plans, orderly start the work, and operate with high efficiency.
5. ***Afterward Disposal:*** After the occurrence of violence in emergency medicine, the hospital should keep high vigilance, check losses and make up shortage, examine each part of work and measures, solve the problems exposed in previous work, and prevent violence in emergency medicine from reoccurrence. Violence in emergency medicine seems to be an incidental event; however, there is inevitability essentially. The social effects caused by the incidents would be profound. As a result, dealing with crises cannot simply focus on solving the criti-

cal incidents of violence in emergency medicine, but seriously analyze the factors in violence in emergency medicine, find out the errors and shortage at work, and conscientiously conclude the experiences and lessons.

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