

**Barriers Against Implementing Blunt Abdominal Trauma Guidelines in a Hospital: A Qualitative Study**Rouhollah Zaboli¹, Shahram Tofighi², Ali Aghighi³, Seyyed Javad Hosaini Shokouh⁴, Nader Naraghi⁵, Hassan Goodarzi⁶

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Abstract

Introduction: Clinical practice guidelines are structured recommendations that help physicians and patients to make proper decisions when dealing with a specific clinical condition. Because blunt abdominal trauma causes a various range of mild, single-system, and multisystem injuries, early detection will help to reduce mortality and resulting disability. Emergency treatment should be initiated based on CPGs. This study aimed to determine the variables affecting implementing blunt abdominal trauma CPGs in an Iranian hospital.

Methods: This study was conducted as a qualitative and phenomenology study in the Family Hospital in Tehran (Iran) in 2015. The research population included eight experts and key people in the area of blunt abdominal trauma clinical practice guidelines. Sampling was based on purposive and nonrandom methods. A semistructured interview was done for the data collection. A framework method was applied for the data analysis by using Atlas.ti software.

Results: After framework analyzing and various reviewing and deleting and combining the codes from 251 codes obtained, 15 families and five super families were extracted, including technical knowledge barriers, economical barriers, barriers related to deployment and monitoring, political will barriers, and managing barriers.

Conclusion: Structural reform is needed for eliminating the defects available in the healthcare system. As with most of the codes, subconcepts and concepts are classified into the field of human resources; it seems that the education and knowledge will be more important than other resources such as capital and equipment.

Keywords: Clinical practice guideline, Implementation, Blunt abdominal trauma, Qualitative study

1. Introduction

Although difference sciences are increasingly in development, medical information and innovation have advanced in the last 50 years (1, 2). Evidence-based medicine, which was proposed by Guyatt et al. in 1992, changes in mortality, morbidity, and life quality continue through combining the best evidence-obtained research and clinical experiences (3). Today, evidence-based practice should be confirmed in various ways, including clinical practice guideline as the most reliable tools in a healthcare system and should be continually produced, published, implemented, and then analyzed according to the needs of all stakeholders of a healthcare system (4, 5). Clinical practice guidelines (CPGs) are structured recommendations that help physicians and patients to make a proper decision to deal with a specific clinical condition (6, 7). These CPGs is usually developed in two forms: original

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clinical practice guidelines and adaptation clinical practice guidelines. Another type is an executive clinical practice guideline, which is a guideline in which more detailed conditions such as hospital conditions are considered, besides the conditions related to localization of guidelines (8, 9). Although the only real tool to measure the success of CPGs is its implementation of themes, there is a little knowledge about what causes or prevents it. Hence, its establishment and implantation should be strictly followed (10, 11), while the identification of factors affecting CPGs implantation in the local condition of each country or organization should be measured according to its specific characteristics and in environmental conditions (12). Despite the rules for certifying the production, implementation, and publication of CPGs in Iran, there is localization or production, and their implementation and implantation are not desirable (13). In fact, implantation and implementation of CPGs have been challenged due to the lack of an evidence-based health system as well as the lack of adequate political support at the macro level in Iran as a developing country (14). After heart diseases and cancers, traumas are the third leading cause of death in developed countries, and its cost is more than the total cost of cancers and heart diseases (15). Today 20% of trauma occurs in the abdominal area, and it is the leading cause of death of 8% of traumatic injuries. Liver, kidneys, intestines, and the spleen are the most common organs affected in abdominal trauma (16, 17). Because blunt abdominal traumas create a various range of mild, single-system, and multisystem injuries, early detection will help to reduce the resulting mortality and disability. Emergency treatment is important; thus the appropriate treatment is based on good CPGs (18). It is difficult to diagnose intra-abdominal injuries, and new diagnostic tests such as CT scans are increasingly used for this. In addition to being expensive, having inaccessibility, and creating the harmful effects of radiation, it causes ED overcrowding and delays in diagnosis and treatment (19). Nevertheless, the estimation of injuries is not simple, and, in most cases, these injuries are hidden by other traumas (20, 21). Although ultrasound and diagnostic peritoneal lavage have high sensitivity in the detection of complications of abdominal injuries, the diagnostic methods have low value in the absence of the free flow of fluid. Even a CT scan has low sensitivity in detecting abdominal injuries, including mesentery, intestines, pancreas, and diaphragm injuries (22-24). In addition, emergency physicians do not have clear criteria for early discharge of patients with blunt abdominal trauma before using a CT scan (25). It should be noted that deaths resulting from blunt abdominal trauma are more than sharp trauma. Trauma is the leading cause of death in the first four decades of life. The third common area in trauma is the abdomen. Females and males are also more likely to get blunt trauma and sharp trauma, respectively (26). Many studies have revealed that diagnosing intra-abdominal organ injuries can be done with high sensitivity and specificity through following a blunt clinical practice guideline and by using disease symptoms and clinical findings. Thus, by checking clinical signs, gross hematuria, and shock with an index higher than 8.0 at the same time, the diagnosis of abdominal organ injury can be predicted with high accuracy. As a result, low-risk patients cannot be discharged without a CT scan or abdomen and pelvic ultrasound and only with expressing the warning symptoms (27-30). Despite the development of bulletproof clothing and reducing the casualties caused by sharp trauma in armed forces, the development of improvised explosive devices (IEDs) has increased losses due to blunt trauma, especially in the abdomen (31-35). In this study, we attempted to study and identify the barriers affecting implementation of blunt abdominal trauma clinical practice guidelines in selected hospitals.

2. Material and Methods

This study was a qualitative and phenomenology study in the Family Hospital in Tehran (capital of Iran) in 2015. The study population included experts and key people in surgery and emergency medicine in blunt abdominal trauma syndromes and management in the implementation of clinical practice guidelines. Inclusion criteria in the study were to have at least five years of educational, medical, or managerial experience and having at least a PhD degree in general surgery or emergency medicine. Sampling was based on purposive nonrandom selection method. A semistructured method was used for collecting data. Guide interviews were prepared to include four prime and nine probe questions (Table 1). Before the main interview, two pilot interviews were conducted for modifying and determining guide interviews. Data saturation was obtained by eight participations using semistructured interviews. After that, interviews were transcribed, and the interviewer confirmed and modified them. Framework analysis was done for analyzing. The method included five stages: understanding, identifying a thematic framework, indexing, drawing tables, and dragging the map. This method is especially designed for interpreting qualitative data (36). In the understanding level, a communication-contain summary was designed. Prime thematic framework was based on literature, guide interview questions, and thematic guides. The framework was also reviewed through reassessment of interviews and repeating the introduction level. Then interviews were transcribed. After matching the interviews with prepared notes, content analysis was used for extracting concepts and also encryption. In this regard, the semantic units were first identified and encrypted. Data encrypted were related to the barriers in implementing blunt abdominal trauma clinical practice guidelines. These codes were later used as components of the model and theory. At the time of encryption, we tried to limit and brief their lengths. Despite the open coding, the interviewer also used

free coding that came to mind during interviews and in the coding level. Then units were classified in the second level. Finally, the main topics as the third level of encryption were derived. Atlas.ti software was used for determining codes and the main topics. The confirmation of experts and triangulation were used to improve reliability. This means that, in addition to the peer assessment strategy, the different views and analysis of documentation were used to interpret the data. Interviews were conducted between April to May 2015, and their average times were 75 minutes. During framework analysis, 15 families were extracted from 251 codes by reviews and removing or combining these codes, and, after framework analysis, five super families were identified.

Table 1. Questions of Semistructured Guide Interview

Prime question	Probe question
1. What are the barriers in implementing blunt abdominal trauma clinical practice guidelines in planning areas in your hospital?	1. What are the barriers related to governmental policies for implementing blunt abdominal trauma clinical practice guidelines in your hospital? 2. Is appropriate establishment of production strategies of guides available for treating these patients? 3. Does your hospital organization or structure provide implementation of the guide?
2. What are the barriers in implementing blunt abdominal trauma clinical practice guidelines in establishing areas in your hospital?	1. Are optimal resources available to implement the clinical guide? 2. Are there required resources to implement the guide in your hospital? 3. Is there the coordination necessary for implementing the clinical guide? 4. Is there the motivation necessary to lead the elements related to the implementation of the clinical guide? 5. What is the reason for the reluctance of the medical staff to implement blunt abdominal trauma clinical practice guidelines?
3. What are barriers in implementing blunt abdominal trauma clinical practice guidelines in the control area in your hospital?	
4. Do you know other barriers in implementing blunt abdominal trauma clinical practice guidelines and other guides?	

3. Results

Table 2 shows experts and key people demography that participated in the study. Accordingly, three people were emergency medicine specialists, five people were surgeons, and five people were the top managers of their organization. Experts believe that Deming cycle (Planning, Do, Check, and Act) can lead to the outcome from all processes and also can act as a proper pattern to study factors affecting implementation of blunt abdominal trauma clinical practice guideline. Participants divided these barriers into the five super families, including technical barriers, economic barriers, barriers related to implementation and supervision, political will barriers, and managerial barriers.

Table 2. Basic Characteristics of Participants ($n=8$)

Code	Participants	Sex		Expertise		Management level		Occupational group		
		Female	Male	Surgeon	Emergency medicine	Middle	Top	Educational	Therapeutic	Managerial
1	Expert 1		*		*		*	*	*	*
2	Expert 2		*	*			*		*	
3	Expert 3		*		*		*	*	*	
4	Expert 4		*		*	*				*
5	Expert 5		*	*			*		*	
6	Expert 6		*	*		*			*	
7	Expert 7		*	*			*		*	*
8	Expert 8		*	*		*			*	

3.1. Technical barriers

Many participants demonstrated that one of the main barriers related to disinterest of therapists was the lack of knowledge or inadequate knowledge for production, publication, implementation, localization, and monitoring on establishment of the guidelines, particularly during training in universities. Participants believed that the super family includes four families. Some examples of expert quotes are given below.

3.1.1. Lack of clinical guidelines and strategies related to create local and updated guides:

“Jobs should be tailored to local conditions and needs of your country (participant no. 4).” “We know that blunt is the medical procedure, which we follow, and there is no order about it from the ministry (participant no. 3).”

3.1.2. High complexity and recommendation about guides:

“Weak structure of strategy and methodological problems may be due to barriers in implementing the blunt guidelines (participant no. 6).” “Blunt proposes that CT scan and ultrasound should be avoided in unnecessary condition because of high cost, radiation risk, or sometimes overcrowding in the radiology department. On the other hand, we know that the many clinical symptoms of spleen, intestines, or liver damage appear in the next 24 hours (participant no. 1).”

3.1.3. Therapists with inadequate skill and knowledge:

“To implement the blunt clinical practice guideline, the validity and amount of information in this regard should be developed to the level such that all people tend to change. To make clear the importance of this decision, we must have an appropriate solution that will meet the interests of everyone to an acceptable level (participant no. 4).” “Individual factors such as resistance and denial by people who do not have the adequate knowledge, attitude, and skills can increase the problems between patient and service provider (like problems related to inadequate and incorrect notification to patients) (participant no. 2).” “Another point is about education; we cannot ask for what we did not teach or was not in the curriculum. Therefore, we cannot have any control or monitoring of its performance (participant no. 5).”

3.1.4. Inner features of blunt abdominal trauma syndrome (tardive syndrome):

“You know that some clinical symptom related to spleen or intestines, liver damage can be appeared in the next 24 hours. Yet, the law does not support you so much. While the examination based on a strong and correct guide is the best way to diagnosis, but we prefer to do a CT scan or ultrasound, even if you can manage the patient with a follow-up (participant no. 1).” “Time and type of intervention play important roles in performing the correct intervention in some procedures. For example, what diagnostic measures should be taken for a patient with an acute bellyache and suspected to blunt abdominal trauma? Or for patients who are admitted with stroke, which procedure should be done and at what time? (participant no. 4)”

3.2. Economic barriers

Participants believed that economic barriers are the main reason for disinterest of therapists to use blunt trauma guidelines in the current situation in Iran. In their opinion, the super family consists of three families. Examples of expert quotes are given below.

3.2.1. Lack of resources and inattention to available sources:

“Unfortunately, there is no proper equipment of this guide in this hospital (participant no. 4).” “Available resources for implementation of the guide are not being used efficiently (participant no. 1)”

3.2.2. Time limit on surgeon:

“As you know, many hospitals still do not have a surgeon or emergency medicine resident; therefore, the general practitioner or student partly act based on algorithms and sometimes call the surgeon. In most cases, the surgeon just advise for a CT scan because of lack of time, lack of residency due to financial constraints, and having multiple jobs. This solution is fast and admissible (participant no. 2).” “In most cases, surgeons do not have enough time for acting based on the graph of guide. Then, they immediately pay for the last section, laparotomy. But is this method cost-effective? (participant no. 7).”

3.2.3. Economic barriers:

“For example, you may do an eye surgery in one minute that does not have any risk. But I do a laparotomy, which requires a lot of time, energy, and it may cause regulatory issues. However, your income is many times higher than mine.” “When hospitals are going to be autonomous, the income-generating section of healthcare (especially surgery) will be picked up at any price (participant no. 3).” “Implementation barriers are mostly clear. For example, barriers of investment are related to disinterest of physicians because of financial problems, payment ways and the lack of legal protection (participant no. 8).”

3.3. Barriers in implementing and monitoring

Some participants believed that, besides the lack of certain strategies for designing and facilitating its implementation that are time-consuming and mismatched with short-lived managerial authorities, inadequate control and monitoring on its implementation, due to the unavailability of tools (expert supervisors and inability and willingness of law enforcement), are among the main factors in the lack of implementing the blunt guideline. The super family is consisting of 3 families. Some examples of expert quotes are given below.

3.3.1. Lack of strategy for facilitating the implementation of the guidelines:

“There are no plans for the implementation of this guide as well as localization and production area (participant no. 5).” “Stabilized implementation of all guides need long-term planning and management and responsive managers, but in our country, there is a problem in these areas because the lifetime of management is very short (participant no. 8).”

3.3.2. Lack of cooperation between the managers:

“Physicians do not usually see problems in making decisions about patients (participant no. 1).” “When you have full confidence in the suppliers or are involved in production, you can commit to something. Clinical practice guideline is no exception. These guidelines are outputs of clinical trials and various studies such as systematic reviews. In Iran, physicians either do a practical job or are faculty members; there are few people who create knowledge as well as being skillful practitioners. Therefore, separation of these two groups can be good (participant no. 2).” “A group should support decisions. This group could be involved physicians, managers, or officials of logistic departments. Here is not just a medical or training center (participant no. 4).”

3.3.3. Lack of monitoring in hospitals and universities:

“For any monitoring, you need a continuous internal evaluation system that can be in the form of a medical committee (participant no. 7).” “Because we do not have this committee, there is no monitoring on implementation or non-implementation of this guide by colleagues (it is assumed that the guideline exists) (participant no. 8).”

3.4. Political will barriers

Many participants stated that the top barriers such as the lack of responsive parties that force managers to implement popular decisions and unwillingness to change that put some stakeholder interests at risk; this will be affective in medical care systems as well as in other systems. The super family also includes two families. Examples of expert quotes are given below.

3.4.1. Defecting regulations for the legal protection from therapists:

“For not confronting with the legal issues, they tend to the mandatory protocols (participant no. 2).” “The law does not support you in all the time. For example, in forensics, patient should be satisfied, as either the physician is rich or insurance pays the money (participant no. 1)”

3.4.2. Political barriers:

“As a manager knows that his/her management lifetime is short or he/she does not have enough time for implementing the guides (participant no. 3).” “It is because of conservatism that is one of the characteristics of our managers. Another reason is non-responsiveness because management lifetime is short, and there is no consideration of people’s interest and foresight (participant no. 6)”

3.5. Managerial barriers

Participants believe that issues such as the lack of meritocracy and the fit between authorities and responsibilities, the failure of medical care system to guide physicians toward some specific expertise, cultural problems, some patient’s expectations and time management in dealing with blunt syndrome are other barriers for implementation of blunt abdominal trauma clinical practice guidelines. The super family consists of three families. Examples of expert quotes are given below.

3.5.1. Time limit for performing the medical intervention:

“It is important to know what interaction you should do for a patient and at what time. For example, what interaction should be done for a patient with an acute bellyache and suspected blunt abdominal trauma? Knowledge related to proper use of technology and performance skills of some procedures play an important role in the proper performance of interventions. Hereby, the best results can be obtained with respect to existing facilities. Therefore, time is important, but recognition of this time is based on our skills and knowledge (participant no. 4)”

3.5.2. Expectations and tastes of patients:

“Implementing of guides should be based on physicians’ conditions, expectations of patients, their culture, and ethical commitment to society (participant no. 2).” “Sometimes expectations of patients highlight this issue. For example, patients prefer to do a CT scan or ultrasound in order for diagnostic peritoneal lavage (participant no. 8).”

3.5.3. Mismatch between jobs and workers (inappropriate managers and mismatch between authorities and responsibilities):

“Monitoring in specialty and subspecialty medical systems is internal, while most of our monitoring system is external. Because there is no appropriate expertise in the targeted area, in practice, the qualified experts do not put it in its place. The people do not perform their responsibilities in the system (participant no. 5).” “Monitoring is about intervention. And the first tool of intervention is authority. The mismatch between authorities and responsibility is the most important factor in the absence of monitoring in our different hierarchies (participant no. 5).” “Human resource is always the most valuable resource. What did you study, ophthalmology or emergency medicine, if you were a better resource (smarter, calmer, with better managerial capabilities and with more confidence, which is necessary for the emergency department)? It means not to use of available resources (participant no. 1)”

4. Discussion

This study showed five barriers on implementation of CPGs in Iran. The study by Baradaran showed that there is a challenge in implementing all CPGs in various healthcare systems in Iran (13). The study confirmed our results. We found the superior barriers first in disrupting the implementation of guidelines. Manavi and her colleagues believed that the absence of micro and macro strategies for establishing systems, which can facilitate production and promotion and can certify implementing of CPGs, as well as the lack of internal and external cooperation between stakeholders for implementing of policies and interventions in the individual and organizational levels (5) is detrimental. Another study revealed inattention to resources, inappropriate use in special societies, CPGs with high complexity, and failure in updating them and numerous recommendations on the available resources (37). Unfamiliarity with guidelines, difficult access, regulations, economic factors, personal skills, needs for updating, continuous improvement of guides, organizational constraints, complex and scatter systems, lack of foundation for implementation and high costs were the main barriers of implementing CPGs (37-41). Based on the literature, time limits in implementation, lack of skills, nonparticipation of physicians, shortage of personnel, shortage of time for studying, and unawareness of managers were the main obstacles in implementation of clinical nursing guidelines (42-46). This finding supported our results in regards to detected barriers. The managerial and political barriers were other barriers against implementation of CPGs in Iran, which were extracted from expert views. The studies by Eddy and McCluskey confirmed our findings; they believed that inattention to individual characteristics of patients in cardiovascular guides, a mismatch between the number of patients and facilities, and unreliability to guides of occupational medicine, lack of support from mental health services, and inappropriate knowledge of physicians in the field of psychiatry are the management systems that have caused non-implementation of CPGs (47, 48).

5. Conclusions

We conclude that the implementation of guidelines is more important for the drafting of them. For successful implementation, guidelines should be picked up over barriers, thus the achievement to provide evidence-based medicine. It is proposed to adopt clear policies and clinical guidelines as based payments. Incentive policies and continuing medical education programs also have more emphasis in implementation of guidelines.

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Conflict of Interest:

There is no conflict of interest to be declared.

Authors' contributions:

All authors contributed to this project and article equally. All authors read and approved the final manuscript.

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