Learning Strategies in Crisis in Emergency Department Staff; 
A Qualitative Study

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Abstract
Aims: Learning in crisis is an approach to help employees deal with critical situations. The nature of critical care departments is similar to the nature of critical situations. The present study was an attempt to identify the most important learning strategies in staff in emergency department of a military hospital so that the facilitative learning strategies could be identified and the main obstacles in this regard would be determined.

Methods: The present study was a qualitative phenomenological piece of research in which semi-structured interview was used to collect data. Purposeful sampling with maximum variation was used for data collection with 20 emergency department staff taking part in the interviews. The sampling continued until the point of theoretical saturation. Analytical framework was used for data analysis. The interviews were indexed by Atlas-Ti software, and the expected themes and sub-themes were identified.

Results: In this study, 8 themes and 28 sub-themes were extracted as factors affecting learning strategies in crisis. The main themes were the importance of learning at work, barriers of learning in crisis, opportunity of learning in crisis; factors affecting learning in crisis; types of learning strategies in crisis; role of management in learning in crisis; role of environment in learning in crisis, and psychological characteristics of employees.

Conclusion: The good management of the staff, paying attention to their financial concerns, making them interested in the job they do, and devising a specific structure for instruction are all steps to take to help facilitate learning in crisis.

Keywords: Learning, Crisis, Emergency, Qualitative
Introduction
A crisis in an organization is defined as any unusual event with severe consequences that can distort that organization’s priorities [1]. A crisis is an event that is less probable but is intensive in nature and can make the organization face unusual demands and confusion as a result [2]. Modern theories hold that such events are likely to be repeated. As such, the need to pay a special attention to crisis management by all types of organizations including the private, state, public, and military organizations is strongly felt [3].

A crisis is defined differently. Crisis in some places is defined as any type of rapid change in working conditions as in the case of Emergency Rooms (ER) in hospitals which face a considerable number of patients in critical conditions every day [4]. The effect of crises on organizations has been increasing over time. By making the best use of these conditions, organizations can improve their personnel’s ability in dealing with critical conditions [5].

A hospital is a big organization in which intelligent and talented personnel with high expertise are working. In the evaluation of the efficiency of a hospital, 8% of the points a hospital can collect belongs to the evaluation of its emergency room. In case a hospital cannot meet the standards for emergency rooms, that hospital is known to be nonstandard, which shows the significance of this department in any hospital in terms of safety and reception risk [6]. Reception risk is the risk of health services taken by patients, doctors, and health care system personnel who are exposed to various dangers [7]. The working conditions of intensive care units such as emergency rooms and ICUs are very similar to critical conditions [8]. Crisis scenarios are very effective tools for individual and organizational learning. One of the most effective methods in improving one’s skill in dealing with critical situations is the observation and practice of others’ performance and behavior in the same conditions [9].

Learning is best understood as the absorption of knowledge. Learning is any kind of change in the form of knowledge increase which leads to one’s change of behavior. Experiencing is a kind of active and practical learning [10,11] which often happens in situations in which the learner is in real life situation over which he or she has no control [12]. Borodzicz and Van Haperen define experiential learning as one which is based on active analysis of one’s experiences. The goal of this type of learning is mindful learning and improving one’s performance [9].

Learning strategy is an important concept which has received a great deal of attention in recent decades. Learning strategies can help improve one’s performance by facilitating learning. They act like tools for identifying their talents and helping them learn new skills. The identification and strengthening of such strategies can help individuals improve their performance using their abilities [13]. Chunharas believes that this approach is the best one for changing knowledge to practice [14]. Joyner and Young consider active learning to be at the highest cognitive level. They believe that the classical type of in-class learning must be
reinforced in clinical conditions by role playing [15].

There have been numerous research studies regarding learning strategies. In a study on nurses, it was found that it is possible to improve nurses’ clinical skills regarding the use of medicines through the use of participatory learning strategies [16]. Okubo et al. concluded that learning strategies based on teamwork can be helpful for the education and improvement of clinical skills in nurses [17]. Darling et al., examining learning strategies in a military organization, suggested that an effective learning method in critical conditions is the use of retrospective analysis which helps organizations act faster, better, and more efficiently [18].

The theoretical justification in the present study is based on learning in practice. Experiential learning is an approach with numerous applications used for organizational issues. This approach is usually used with those employees whose improvement in their skills and achievements are of high importance. The present study was an attempt to investigate the learning-in-crisis strategies in emergency room of Baqiyatallah hospital and determine the measures and policies which can be supportive and facilitative for learning in crisis in emergency rooms.

**Methods**

The present study was a qualitative phenomenological study. Since in the present study we were dealing with concepts, attitudes, and individuals’ opinion regarding learning in crisis, this study is categorized as a phenomenological study. In this type of research, human experiences about daily events are studied [19-23]. Experiential learning is in fact problem identification, problem solving, and the discovery or creation of new learning opportunities.

The sampling was a purposeful sampling with maximum variation in which the researcher tried to select cases based on the type of information or data needed based on the initial data collection [24, 25]. It is worth mentioning that in qualitative studies, what is important is saturation in data rather than sample size [26]. The study sample included all the personnel in the emergency department including all the doctors, nurses, and paramedics. The data collection continued to the point of saturation. The inclusion criteria included having at least 3 years of experience of working in the emergency department for nurses and 5 years of experience in ED for doctors and paramedics. For initial data collection, 20 experienced staff were selected including 4 emergency medication specialists, 12 nurses, 1 medical practitioner, 1 emergency medical technician, 1 paramedic, and 1 Health Management graduate. The mean work experience of the sample was 11.3 years.

A semi-structured interview with 10 questions was used for data collection in which questions were prepared for the interview but based on the responses received, additional questions were asked [27,28]. After conducting pilot interviews, the questions were reviewed and revised by the research team. After having a face to face meeting with each participant and explaining the research objectives, their participation consent was obtained and an
appointment was set for doing the interview. The participants were ensured that the collected data would be confidential and no identity will be revealed. Each interview took between 20 to 60 minutes and was recorded. All the interviews were transcribed the day after the interview by the researcher. P in the rest of the article stands for participant and represents each participant’s response.

For the purpose of data analysis, the procedure in framework analysis, specifically designed for qualitative data analyses, was followed. It has five stages: familiarization, identifying a thematic framework, indexing, charting, and mapping. In the familiarity stage, a content summary was prepared for each interview. The initial thematic framework was designed based on the literature available on the subject and the interview questions. This framework was reviewed and revised based on the review of the interviews and repeating the familiarization stage. The initial indexing was then done using Atlas-Ti [27,28]. After the interviews were matched with the taken notes, themes were extracted using content analysis and data were coded at three levels with themes coming at the last level. Eight themes and 28 sub-themes were identified.

<table>
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<th>Table 1. Semi-Structured Interview Questions</th>
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<tr>
<td><strong>Main questions</strong></td>
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<tr>
<td>1. What do you think of ‘experiential learning’? What is your definition of ‘experiential learning’?</td>
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<td>2. Do you have ‘experiential learning’ at work every day?</td>
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<td>3. What do you think of this type of learning in emergency rooms?</td>
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<td>4. What is the biggest obstacle in the way of experiential learning?</td>
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<td>5. What are the ideal conditions for experiential learning?</td>
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<td>6. Are ER conditions critical? If yes, what effects do they have on learning?</td>
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<td>7. Are there any instructional programs for learning in your department? If yes, could they help you?</td>
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<td>8. How do you evaluate the working conditions and the role of management in learning?</td>
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<td>9. How do you evaluate the atmosphere and interpersonal relationships among the staff? Is it possible to share your experiences with each other?</td>
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<td>10. How are the needed skills for working in critical conditions achieved?</td>
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Table 2. The Key Themes and Sub-themes in Learning in Crisis

<table>
<thead>
<tr>
<th>Themes</th>
<th>Sub-themes</th>
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| 1 The significance of experiential learning                         | • Higher self-confidence  
• Changing theory to practice  
• Complementing theoretical knowledge  
• Updating one’s knowledge base |
| 2 Obstacles in the way of learning in crisis in emergency rooms      | • Ignoring creativity in the personnel  
• Heavy workload  
• Income management in the department  
• Personnel’s individual characteristics  
• The affective factors in staff and patients |
| 3 The opportunity of learning in crisis in emergency rooms           | • The routine and repetitive cases  
• New and unexpected cases |
| 4 Factors affecting learning in crisis in ER                         | • Appropriate management of the personnel  
• Financial incentives  
• Personnel’s enthusiasm for work  
• The necessity of a unified and specific structure of educating the personnel |
| 5 Types of learning in crisis in ER                                  | • Learning through observation  
• Learning fact reviews  
• Learning through more experienced peers |
| 6 Role of managers in learning in crisis                             | • Talent management  
• Preparing an appropriate learning environment  
• Managing the personnel’s working schedule  
• Having a fair financial incentive distribution |
| 7 Role of environment in learning in crisis                           | • Appropriate facilities and equipment  
• Good interior design  
• Improvement in staff’s professional relations |
| 8 Personnel’s individual characteristics                             | • Personnel’s enthusiasm for learning  
• Eagerness to gain skills and use them  
• Positive psychological and sociological characteristics in the personnel |

Results

Eight themes and 28 sub-themes were identified as in Table 2.

Theme no. 1: The Significance of Experiential Learning

Experiential learning or learning at work is a type of practical learning which receives a good deal of attention from institutes and organizations which have to deal with more practical services. The majority of respondents emphasized the necessity of experiential learning. They believed that ‘experiential learning is a good chance to practice one’s knowledge and gain experience’ (P12). ‘It helps practice theories and one’s theoretical knowledge’ (P17). When an individual is being trained at university for a specific major or job, he or she learns a series of theoretical notions and concepts. In order to practice these notions and to complete his or her theoretical knowledge, they should step into the working environment and practice all the techniques they have read about. ‘Experiential learning completes the theoretical notions learned because there are many facts that can be learned only at work.'
This type of learning helps increase experience’ (P20). An individual will show his or her knowledge in facing new cases and situations at work. ‘Everybody should try to be up-to-date regarding the theoretical aspect of his or her expertise and should know that mere dependence on experience or theories alone does not work’ (P18).

**Theme no. 2: Obstacles in the way of learning in crisis in emergency rooms**

Experiential learning faces a series of problems and obstacles whose identification was part of the present study’s objectives. Different issues including human, financial, and physical elements can either interfere with or slow down experiential learning. For example, paying enough attention and respecting nursing staff’s knowledge base in emergency rooms is of great importance. If nursing staff feel that they are accepted by the medical treatment team as members of the group, for sure their attitude toward learning at work and their functioning will be different. Lack of attention to nurses’ professional creativity at work is an important obstacle in the way of experiential learning for them. Most of the interviewees indicated that the biggest obstacle especially in emergency rooms and health care centers for nursing staff happens when their knowledge is not respected and is in fact suppressed. In such a situation, nurses are assumed to be machines having no creativity (P19).

The majority of the respondents believed that the fact that emergency rooms are so crowded is one the main barriers to learning. ‘The main obstacle in the way of learning is the heavy workload and the high pressure on the human resources, which hinders the personnel from learning’ (P6). Moreover, the type of financial management in the emergency rooms was another factor affecting the personnel’s learning and motivation. ‘The unfair distribution of financial rewards is another factor decreasing the personnel’s job motivation’ (P5). Personal characteristics of the personnel can also affect learning. ‘There are some colleagues who make learning difficult or even impossible due to their negative personality’ (P13). Another point emphasized by the respondents was insufficiency of the personnel’s knowledge in terms of mastery of theoretical basis of their job. ‘When an individual has not mastered the theoretical knowledge during his or her academic education, he or she will face numerous challenges when entering a real situation, which makes experiential learning difficult’ (P17). Still another problem is the emotional and mental state of the personnel and patients in the emergency room. Since the condition is critical in such a department, numerous problems may arise. ‘Stress and job pressures do not allow an appropriate context for learning. Patients’ agitation and their caretakers’ anxiety are among the factors negatively affecting experiential learning’ (P 7).

**Theme no. 3: The Opportunity of Learning in Crisis in Emergency Rooms**

Emergency rooms are the front doors for patients to any hospital. As such, a range of rare cases may visit this department, which makes the opportunity of learning for the personnel working in this department; however, the extent to which each member
of the treatment group can have learning opportunities is different. The interviewees believed that the number of learning opportunities is very high for nurses but not doctors. ‘Due to the long period of academic education doctors receive when they are medical students, they have less chance of facing new cases and learn as a result; however, for technicians and nurses, the opportunity of learning is very high’ (P4). The respondents also indicated that the learning chance is low on days when most cases are routine. ‘When the rare and new cases do not visit the department, it is natural to have no learning’ (P3).

The majority of the respondents believed that the chance of learning is very high in the emergency room. ‘Since the activities in the emergency rooms, unlike general departments in the hospital, does not have a routine and predictable procedure, every day one faces new cases with different conditions, which increases the chance of learning’ (P20).

**Theme no. 4: Factors affecting learning in crisis in ER**

There are a number of supportive factors that can help facilitate learning in crisis in emergency rooms. Paying attention to financial and spiritual incentives in the personnel, an appropriate management, and the presence of highly enthusiastic individuals are among such facilitative factors. ‘The scientific and reasonable management of the department is very important’ (P2). ‘The management of the human resources in the department is one of the important responsibilities of a manager which can have a direct effect on learning’ (P20).

Regarding the financial motives, it is clear that one of the most important motives in the personnel is meeting their financial needs. ‘An ideal working environment is one in which the personnel’s financial and non-financial needs are met so that they can be enthusiastic about what they do. If the personnel do not feel any financial pressure, they will not try to work in other hospitals for meeting their needs. Instead, they will focus on what they are supposed to do in the department and will be eager to learn’ (P10). ‘There must be a special attention paid to emergency room personnel’s financial issues so that their motivation can increase’ (P14). ‘An ideal condition is one in which all the barriers are eliminated, the number of personnel is enough, and the personnel’s enthusiasm and job satisfaction is very high’ (P4).

Emergency departments, with all their complications, need a specified structure for pursuing the education and learning chances for their personnel. ‘The presence of highly experienced personnel and young staff who are eager to learn are among the conditions needed to be met for ideal learning opportunities. Having a person in charge of educational affairs and the appropriate assignment of tasks to the personnel in each working shift are also very important. There must be an active, motivated, and eager person in charge of educational affairs only in each emergency department. He or she should present the latest findings and methods to the personnel’ (P17).

**Theme no.5: Types of learning in crisis in ER**
There are numerous methods of learning whose selection should be done according to one’s contextual and individual characteristics. Observation, reviewing, and connecting with the more experienced peers are all techniques that can be used for improving one’s theoretical knowledge as well as their practical skills. A variety of techniques exist in experiential learning, but the respondents emphasized on three of them. Observation was one of them. ‘Due to the variety of cases visiting this department, there is a good chance of learning at work. By observing how the specialists work and treat such patients, other personnel can learn a lot and even get involved practically’ (P10). Any type of involvement with patients in emergency rooms is kind of learning and is a good chance for nursing staff to improve their skills and experience’ (P20).

The interviewees stated that ‘this special situation is a practical school for the personnel to practice crisis management. In this department, the personnel can step in the crisis and learn the different techniques of dealing with it’ (P6). ‘Emergency rooms are the best workshops. One needs to pay attention to the personnel’s interpersonal relations, nursing staff should be involved in the treatment process, and both theoretical and practical maneuvers for dealing with crisis need to be organized regularly in this department’ (P5).

Another technique is reviewing the facts as mentioned by the participants. ‘Emergency departments are not meant for initial learning. The personnel should first work on treatment techniques on dummy subjects, then work with an experienced staff in the emergency room in order to observe what they do and learn. Only then can they act independently. An emergency room is the best place for acquiring theoretical knowledge if the new staff work under the supervision of the more experienced peers’ (P3). ‘Most skills cannot be taught using theoretical education only. For example, locating veins in a patient in critical condition is not possible without training. An individual needs to practice it on a dummy. He or she should complete their skills in general wards and only then can he or she practice that in the emergency department’ (P1). Most of the respondents believed that learning happens as a result of being with and working with the more experienced peers. ‘The emergency department is a good place for learning because the young and new staff can learn a lot as a result of working with more experienced peers. ‘The emergency department is a good place for learning because the young and new staff can learn a lot as a result of working with more experienced colleagues’ (P11). ‘There is a good relationship between the new and young personnel and the more experienced ones in the department. The young staff can observe what the others practice, which is a very positive point. It has resulted in the younger personnel’s enthusiasm for remaining and working in this department’ (P17).

**Theme no. 6: Role of managers in learning in crisis**

The key role of management in providing the right conditions for learning by doing, finding talented personnel, managing the human resources, and scheduling the personnel’s shifts is quite clear. One of the points the interviewees emphasized on was the need for the managers to pay attention to the talented personnel in this department.
Managers who have an educational orientation help learning more. Experience shows that learning in an organization can improve the efficiency in the long run. It can also increase the personnel’s motivation and skills, help identify their potentials, and invest on the eager and talented staff” (P6).

‘The appropriate management of the human resources is one the major responsibilities of the managers with a direct effect on the personnel’s learning. The managers should take learning by doing in this department very seriously. They should send their personnel to workshops and seminars for improving their skills’ (P20).

Providing an educational context and environment for the personnel by the senior managers was another issue emphasized in the interviews. ‘Senior managers can pave the way for experiential learning in the emergency rooms. They must support their personnel both spiritually and financially so that job satisfaction is increased and the personnel become more eager to learn. They should have a friendly relationship with their personnel’ (P4).

Next point was the appropriate assignment of responsibilities in the department and the right and fair allotment of the working shifts. ‘One of the most important responsibilities of a manager is having an efficient working schedule for the personnel’ (P19). ‘Efficient management of the human resources both in terms of quality and quantity is one of the key roles of managers’ (P5). ‘The distribution of human resources is very important. Making a balance in each working shift so that experienced and non-experienced personnel work together is a fact that must be noted by managers’ (P14).

**Theme no.7: Role of environment in learning in crisis**

The environmental context in which people are working can affect the learning process in a number of ways. The physical context and the interpersonal relations among the personnel can help improve the quality of their performance and provide an appropriate condition for learning. On the other hand, inadequate or non-standard facilities can result in a decline in the quality of offered services. To the respondents, ‘supplying the needed equipment and facilities and asking for feedback from the personnel are important for learning’ (P7).

‘Increasing the number of beds in the emergency rooms must be based on the related standards, and the needed physical, financial, and human resources must be met as well’ (P6). The other issue is the appropriate internal design of the department. ‘The appropriate design of the working environment based on the latest standards as well as an appropriate allocation of human resources and balancing the workload will help an individual be able to learn through experiencing’ (P7).

The next point is the improvement of the professional relationship among the personnel. ‘There is a good deal of communication between professors and their assistants and sometimes between professors and eager nurses; however, it is not enough and must increase’ (P4). ‘The communication among the personnel in emergency rooms is better than other departments in hospitals due to the 24 hour presence of doctors and specialists in this
department. The existing taboo regarding the communication between nurses and the specialists and residents must be broken, and a deeper scientific communication must be shaped in order to strengthen learning’ (P5).

**Theme no.8: Personnel’s individual characteristics**

For sure, the personnel working in emergency departments should have some specific characteristics and abilities to be successful in learning. ‘The first step for working in emergency rooms is having a high motivation. Motivated personnel usually enjoy a better job satisfaction and enthusiasm for work and seek learning as a result’ (P10). ‘Personal interest in such a job is very important because the working conditions are very hard to bear in this department. If one is not interested, he cannot tolerate the working conditions let alone try to improve his or her skills’ (P11).

The next point is an individual’s effort to learn and improve skills. ‘In emergency rooms, due to the unique nature of this department in terms of patients’ critical conditions, the personnel have to learn, practice, and improve their skills all the time. As such, the atmosphere dominant in this department is apt for learning’ (P19). ‘In order to learn in this department, the first step is not to be afraid of the critical situations. One should endorse such conditions because they are the best opportunities to learn’ (P17). The psychological characteristics of the personnel are important as well. ‘Individual characteristics of the ER personnel must be different from others working in other departments in terms of their personality, physical strength, and management ability.

An individual working in ER must be a logical person familiar with psychological and sociological issues. He or she should be able to soothe patients and have a high motivation for learning and skill improvement’ (P3).

**Discussion**

Emergency rooms with so many visits in critical conditions can be good places for learning in doing. Coralei, examining the strategies facilitating nurses’ experiential learning in emergency rooms, concludes that education in critical condition is not something very common [29]. Powley, confirming Coralei’s conclusion, states that critical conditions in an organization can lead to learning by strengthening the social relations among the personnel [30]. Eliot also concludes that most organizations do not possess the capability of learning in crises and, as a result, have to undergo a lot of economical and human resources costs due to lack of attention to supportive policies regarding learning in crisis [31].

The results of the present study indicate that self-motivation and self-responsibility, connection with trustable peers, enjoying organizational support for learning, and meeting the basic needs can facilitate learning in crisis. In a critical place such as the emergency room of a general hospital with too many daily visits, one can make the best use of opportunities for learning in crisis and facilitate the improvement of the personnel’s skills by a supportive and efficient management. These findings point out to the fact that the policy makers in health care system need to pay a special attention to learning in crisis in all critical departments in hospitals. Moats et al.
confirming our results state that all organizations need to plan appropriate scenarios and strategies for learning in crisis [32].

The majority of the individuals working in this department were aware of the importance of learning in doing and emphasized the need for that. They believed that experiential learning can help increase self-confidence at work, change theories into practice, complete their theoretical knowledge base, and update their knowledge. Nelson and Eriksson emphasize that one of the ways to prepare the personnel for critical conditions is paying attention to learning in crisis for improving the personnel’s abilities [33]. Caroll and Edmonson confirm that creating efficient communication among the personnel, facilitating the relationship between action and reaction, and strengthening the favorable elements in health care culture can result in learning in health care organizations [34].

Disregarding the creativity and knowledge of the personnel, heavy workload, unsuitable environment, income-oriented management, and peers’ individual characteristics and personality were among the most important barriers to learning in crisis in emergency rooms. The senior managers need to attempt to eliminate these problems if they intend to improve their personnel’s skills in dealing with critical conditions. These results were in line with the obstacles identified in [35-37].

**Conclusion**

The results showed that the chance of learning is very high in emergency rooms. The majority of the respondents emphasized on the existence of new and non-routine cases in this department. The most common learning methods were reported to be observation, fact review, and learning from more experienced peers, with observation receiving more attention. The role of management was also highlighted. Managing learning in crisis, managing personnel’s talents and potentials, creating an appropriate context for learning, and having a fair system of distributing financial incentives are measures to be taken by managers. Examining the role of environmental variables as well as the personnel’s individual characteristics is an important variable in having successful strategies for learning in crisis.

To the best knowledge of the researchers, the present study was the first qualitative research in the field of learning in crisis in emergency rooms. As such, it faced some limitations. One of the problems the researchers faced was the personnel’s limitations in terms of time due to the heavy workload they had. It is suggested that in future research, the efficiency of learning strategies for learning in crisis be examined and the best methods of learning in crisis be determined.

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