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Research Article

"Efforts to Master Conditions" alongside "Care in the Shadow of Fear and Stress": The Experience of Emergency Medical Technicians (EMTs)

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Abstract

Introduction: Given the high prevalence of trauma and its economic and social consequences in Iran, along with the importance of the quality of initial interventions at the scene, there has been limited research conducted in Iran on the psychological and cognitive impact of individuals and their perceptions when facing life-threatening incidents, due to cultural contexts and working conditions.

Methods: This study employed a qualitative approach, utilizing phenomenological hermeneutics and focusing on the Van Manen methodology. The data collection method involved semi-structured in-depth interviews with EMTs, using the main research question: "What is the lived experience of EMTs caring for patients with life-threatening trauma?" In the first stage, deep interviews were conducted with EMTs to uncover the essence of caring for critically ill patients. In the second stage, the data collection was conducted using the Van Manen method.

Results: The results of this study showed that the themes of "Care in the Shadow of Fear and Stress" and "Striving for Resilience and Mastery in Conditions" emerged as fundamental aspects in the lived experience of EMTs. Based on the results of this study, "Caring in the Shadow of Fear and Stress," which arises from facing traumas, indicates that technicians are overwhelmed during care and, subsequently, burdened with a multitude of pressures. On the other hand, the article highlights the effort to build resilience and mastery over circumstances, drawing on the lived experiences of emergency services personnel who provide care for patients in the shadow of fear and stress.

Conclusion: The effort to build resilience and mastery over circumstances has been highlighted as another central theme in this article regarding the lived experience of EMTs caring for patients with life-threatening traumas.

Keywords: Emergency, Qualitative, Resilience, Stress, Trauma.

Introduction

Trauma is significant and life-threatening worldwide.[1,2] Trauma patients are typical cases for emergency technicians. Trauma is a typical medical emergency with the highest interaction with medical emergency

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services and the second leading cause of mortality across all age groups in Iran after cardiovascular diseases.[3] Pre-hospital and hospital trauma care are essential components of acute care services, providing rapid access to life-saving treatments for various time-sensitive conditions. High-quality pre-hospital and emergency care can save human lives and minimize the consequences of surgery and acute illness.[4] The primary factor in reducing trauma-related mortality is not transfer speed but rather the management of care by medical staff.[5] Decision-making and service delivery are crucial tasks for pre-hospital personnel. Therefore, they must acquire sufficient knowledge, skills, and insight to perform interventions and make appropriate immediate decisions.[6] Given that emergency operational personnel face daily job-related hazards, extensive research has been conducted on the stress levels they experience and the coping strategies they employ in this field.[7-12]

Top of Form

It has been found that repeated and continuous exposure to trauma can potentially have secondary harmful effects on individuals at risk. Working in emergency services is a challenging profession and is among the most high-pressure occupations.[13] Emergency operational personnel are subjected to the impact of consecutive and challenging complex incidents, which can result in various physical and psychological injuries. Routine activities associated with the job as a technician directly correlate with an increased risk of depression, suicidal ideation, anxiety, post-traumatic stress disorder, substance use disorders, as well as cardiovascular diseases, musculoskeletal problems, fatigue, and occupational burnout. This heightened risk may also be attributed to operational factors such as a lack of job autonomy and control, an incompatible workplace culture, and overtime. Shift work, fatigue, and occupational burnout are also linked to health issues in emergency operational personnel.[14] These personnel are exposed to many critical incidents daily.[15]

A critical incident is an event that poses a significant threat to a patient's life.[16] Emergency operational personnel experience many traumatic events while performing their duties. A life-threatening traumatic event encompasses dangerous incidents, including exposure to sudden death, serious injuries, sexual assault, vehicular accidents, severe burns, suicide, and mass casualty incidents.[17] Ortlepp and Friedman stated that the significance an individual attributes to a critical and life-threatening incident can be influenced by various factors, including the nature of the event itself, the personality characteristics of emergency operational personnel, and the nature of the patients involved.[18] Life-threatening critical incidents can cause fear in emergency personnel and may disrupt their performance due to an inability to concentrate, resulting from the fear they have experienced. As a result, there is another component of interaction, the meaning that emergency operational personnel attribute to this event, which affects their cognitive, emotional, and behavioral performance.16 Emergency medical services are growing, and for the evaluation of these services, the structure and performance of these services need to be assessed quantitatively and qualitatively within a technical framework.[19] Based on the review of texts conducted by the researcher, there is limited information about the impact of caring for trauma patients on emergency operational personnel.[15]

Few qualitative studies have been conducted globally that specifically examine this phenomenon. For example, a phenomenological qualitative study was conducted with five emergency personnel in South Africa. Four main themes emerged from the findings. [16] In another mixed-methods study aimed at exploring the perceptions of emergency personnel, 184 staff members from Australia and New Zealand completed the Likert Psychological Distress Questionnaire and responded to open-ended questions.[20] Most of the existing research has been quantitative, and this phenomenon has not been specifically explored. Given that pre-hospital conditions, cultural context, pre-hospital facilities and equipment, as well as the educational levels and training of emergency personnel, differ in our country compared to others, the experiences of these individuals in our country are likely to be distinct.

Therefore, investigating the experiences of emergency operational personnel in caring for trauma patients can help identify the challenges they face in their work and ultimately aid in developing effective coping mechanisms.[15,21] Additionally, studying the experiences of emergency operational personnel can identify weaknesses in pre-hospital trauma care training programs and the safety of emergency services on-site.[22] This article examines the experiences of emergency technicians in dealing with life-threatening trauma, offering a unique perspective that addresses this topic in

a comprehensive and specialized manner, which has previously been unexplored. While numerous studies exist on the overall performance of emergency technicians, this article offers a fresh and unique perspective by focusing on innovations and real-world field experiences. The innovation of this work lies in its systematic exploration of emergency technicians' experiences in situations where patients' lives are directly threatened, and it offers new solutions based on these experiences. This study has the potential to contribute to the development of new methods and protocols in the training and management of acute trauma. This area has not been previously examined with such precision. In other words, this research is recognized as a unique and unprecedented resource in this field due to its innovative approach to identifying and analyzing the experiences of technicians in critical situations and providing practical recommendations based on those experiences.

Hence, paying special attention to the meaning of confronting life-threatening trauma is crucial. Given the high prevalence of trauma and its economic and social consequences in Iran, along with the importance of the quality of initial interventions at the scene, there has been limited research conducted in Iran on the psychological and cognitive impact of individuals and their perceptions when facing life-threatening incidents, due to cultural contexts and working conditions. Therefore, evaluating pre-hospital emergency care and identifying individuals' strengths and weaknesses can help relevant authorities improve the level of healthcare for injured patients. Considering the complexity of the aftermath of this phenomenon and aiming for a deeper understanding of the experiences of emergency operational personnel in caring for life-threatening trauma patients, this study was conducted qualitatively using phenomenological hermeneutics to gain a precise comprehension of how emergency operational personnel perceive their experiences of this phenomenon and how they interpret them.

Methods

Design of the Study

Given the necessity of delving into the inherent complexity and the meaning of the experience of caring for life-threatening trauma patients, the phenomenological hermeneutic interpretive research method was employed, focusing on the Van Manen methodology. In this study, the following steps were carried out based on the six themes identified by Van Manen:

1. Initially, research questions were formulated to focus on the phenomenon of the lived experience of these emergency operational personnel in caring for life-threatening trauma patients.
2. In the second stage, deep interviews were conducted with emergency operational personnel to uncover the essence of caring for life-threatening trauma patients. Through interpretation and analysis, hidden meanings were extracted.
3. In this stage, meaningful units were extracted from the transcribed interview texts based on the primary research question. Thematically related sentences were selected, and through repeated cycles of back-and-forth iterations involving linguistic changes, inherent and related subthemes were separated using the free imaginative variation technique. Thematic analysis was performed, and inner and related sub-themes were extracted after linguistic revisions.
4. In the fourth stage, researchers provided a detailed and accurate description of caring for life-threatening trauma patients by reflecting on the statements of emergency operational personnel.
5. In the fifth stage, while listening to the audio recordings, researchers simultaneously kept the research question in mind, establishing a strong connection between the text and the studied phenomenon.
6. Finally, researchers constantly returned and maintained the connection between parts and the whole throughout the research process. The text was presented to demonstrate the phenomenon's essence, and the entire study was reviewed to determine this connection and internal coherence.

Sampling Method

The data were collected from May 2021 to September 2022. The data collection method involved semi-structured in-depth interviews, using the main research question: "What is the lived experience of emergency operational personnel in caring for patients with life-threatening trauma?" In cases of ambiguity in descriptions, clarifying questions such as "Could you please provide more details?" or "What concept do you mean?" were used to help obtain a clear understanding of participants' statements. Participants in this research included emergency operational personnel. The

inclusion criteria were direct experience caring for patients with severe life-threatening trauma and a willingness to participate in the study. It's worth mentioning that participants were required to have at least one year of active service in emergency bases. The research setting included emergency bases affiliated with Shiraz University of Medical Sciences. These bases were selected based on study conditions in locations prone to incidents, primarily in urban and interurban areas where more encounters with trauma occur. Interviews were conducted during break times and when emergency operational personnel were not on shift duty. Each interview lasted between 45 to 90 minutes. Six participants were interviewed for one session each, while four other participants were interviewed for two sessions each, resulting in 14 interview sessions with 10 participants.

Data generation continued until theoretical saturation, achieving abstract, relevant, dynamic, and deep results, which was achieved after conducting 14 interviews and analyzing them, when no new information was obtained with the last two interviews, and the collected data were indeed repetitions of previous data.[23] Immediately after each interview, the researcher transcribed the recorded interview verbatim and reviewed the transcribed text multiple times. Textual data and extracted codes were managed using the MAXQDA 10 software.

Data Analysis

The data analysis was conducted based on activities related to stages 3 to 6 of the Van Manen method (2006) and is described as follows:

In this study, interpretive texts from interviews were read multiple times, and a general description was written with a holistic approach. Thematic analysis was conducted using a phenomenological approach, and thematic phrases were extracted through a selective process. Researchers read the text several times and extracted thematic phrases based on the primary question, "What is the lived experience of emergency operational personnel in caring for patients with life-threatening trauma?" These expressions were written as thematic statements. Then, by identifying common themes, categorizations, and similarities among the texts, thematic clusters were determined, and finally, thematic clusters were merged and categorized.

During the process of interpreting interviews, there was a constant movement back and forth between the whole and its parts. This process was carried out for understanding and critical reflection. In this research, the main results were discussed among the research colleagues through hermeneutic dialogue. To distinguish and confirm primary and subthemes, the open visual diversification method was utilized.

Trustworthiness

This research employed the Lincoln and Guba criteria to ensure accuracy and validity. Credibility in qualitative research is examined based on four main criteria: credibility, transferability, confirmability, and dependability.[24] For credibility, in-depth interviews were conducted with participants. Additionally, the research findings were presented to the participants, and they validated these results against their understanding of the experience of providing care to patients with life-threatening trauma. This signifies a prolonged engagement with participants to achieve credibility and assurance. Member checking and expert analysis ensured the study's dependability and validity. In this study, detailed, comprehensive, and profound descriptions were provided to establish the necessary groundwork for effectively conveying the text's meaning to others. For confirmability, the opinions of experts in the field of literature and specialists in emergency medical care with experience in caring for patients with life-threatening trauma were taken into account. However, because the current study follows a phenomenological approach, the considerations related to enhancing validity and reliability in phenomenological studies, as outlined by Van Manen in the book "Phenomenology of Practice," were also taken into account.[23]

Results

In the present study, the participants consisted of ten male emergency operation personnel, with an average age of 37.4 years and work experience in pre-hospital emergency care ranging from 2 to 20 years (Table 1).

The main themes derived from this study include "Caring in the Shadow of Fear and Stress" and "Striving for Resilience and Mastery over Conditions." The central theme, "Caring in the Shadow of Fear and Stress," is comprised of two sub-themes titled "Compromised Care" and "Psychological Burden Resulting from Limitations." Additionally, the theme "Striving for Resilience and Mastery over Conditions" comprises two sub-themes: "Efforts to Build Mental

and Psychological Capacity" and "Committed Care" (Table 2).

Emergency pre-hospital personnel may undergo various experiences. At times, due to inappropriate interventions by bystanders and observers at the scene, as well as the intense psychological trauma resulting from confronting distressing scenes, their caregiving can become disrupted. Simultaneously, resource shortages, lack of facilities, and insufficient support from higher-level managers intensify the burden of providing care. They bear a substantial psychological load and provide care amidst a deluge of stress and pressure. These professionals take control of the scene, utilize various defense mechanisms to adapt to the circumstances, and exert their utmost effort to carry out committed care. This approach enables them to establish mastery over the scene and its challenging conditions.

Care in the Shadow of Fear and Stress

Care in the shadow of fear and stress may arise due to disrupted caregiving resulting from emotional engagement with patients and unsafe and inappropriate working conditions characterized by challenging circumstances. It can also stem from functional impairments due to the presence of bystanders and their misplaced interventions, and psychological burdens stemming from limitations due to equipment and staff shortages. Furthermore, organizational and managerial challenges, such as the absence of appropriate work policies, inadequate communication and coordination between emergency operational personnel and other medical staff, and insufficient support from superiors, can contribute to this situation.

Disturbed Care

Disrupted caregiving is one of the most significant experiences reported by emergency operational personnel in this study. These experiences arise due to the painful and distressing nature of traumatic scenes, inappropriate interventions by patient companions, and the unstable nature of severe trauma scenes. The impact of these scenes can linger and have unpleasant effects on the technicians for a long time, creating a lasting and negative impression.

Participant number 2 stated in this regard: "I responded to a call, a confrontation where about 7 to 8 people had brutally attacked each other with knives. They were in the lobby of a building; 7 to 8 people were sprawled out; one had a broken arm, and another had a torn chest. You could say that a few millimeters of blood had pooled on the lobby floor; it was horrifying. The smell of blood made you sick, shaking me to my core."

In such circumstances, EMTs are exposed to extremely distressing and harrowing scenes, which can subject them to intense psychological and emotional stress. These feelings can become obstacles to carrying out actions correctly and effectively.

Furthermore, EMTs also mentioned that in some cases, the presence of observers and bystander interventions can disrupt the care process. Participant number 6, in this regard, states: "Triage is important, but people think we're wasting time. They started swearing and insulting, urging us to transfer the patient quickly. The worst is when they force us to resuscitate a black tag patient."

Unfortunately, the interference caused by patient companions can lead to delays in the performance of EMTs, and this factor alone can significantly disrupt the effective and adequate provision of care.

Due to their responsibilities in caring for life-threatening trauma patients, many EMTs may be exposed to risks and horrific experiences that lead to negative reactions and severe psychological trauma. In this regard, one of the EMTs (participant number 4) mentioned: "The moment we lost the child, I held him in my arms like his father, and I started crying as if he was my child." These statements indicate the emotional impact on the technician in adverse scene conditions. Similarly, Participant Number 3 stated: "A woman with her child was crossing the main street when she was hit by a truck and was split in half, and her child witnessed the tragic scene of her mother's death. After this incident, I could not continue the shift; I went home and cried loudly under the shower. The screams of the child haven't left my mind."

The magnitude of experience from distressing scenes not only leads to disturbances in care during the scene itself but can also continue to affect emergency technicians for a long time afterward, potentially creating disruptions in their subsequent medical interventions during that mission or future missions.

Mental Burden Due to Limitations

Pre-hospital emergency personnel faced numerous challenges within the organization and management, including workload pressure, insufficient bases, equipment and staff shortages, inadequate

infrastructure, lack of skilled teams, and heavy shifts, as well as a lack of attention to their psychological conditions after facing challenging situations with critically ill patients in need of life-saving care. They acknowledged that the psychological pressure stemming from these limitations causes care to be provided under stress and fear. For instance, Participant 6 mentioned, "The problem we face is in scenes where we have more than two patients and lack facilities. For example, I've had to bring two patients in one ambulance, like leaving one patient behind and placing another patient on the seat in the ambulance cabin where there is no space for any interventions." In these critical and high-pressure circumstances with such constraints, they sometimes experience unkindness from colleagues or superiors, leading to a sense of abandonment. For instance, they might feel that they lack sufficient support from managers and policymakers, or, due to poor communication with other healthcare personnel during patient handoffs at the hospital, they become frustrated. Participant 4 stated, "Our system has no appreciation or support. In scenes where we are in the worst condition and hand over the patient to the hospital, conditions are still dire. Our colleagues at the hospital do not establish good communication with us, or they constantly criticize our work."

The participants also highlighted the inadequate facilities and equipment shortage in pre-hospital care for trauma patients. They mentioned that they lack the courage to voice their concerns to their superiors regarding equipment shortages.

Participant 5 mentioned the shortage of defibrillator devices and the challenges that arise, saying, "In the ambulance, we only have one defibrillator, and if it breaks down, it takes several days to get it fixed. During those days, who knows what could happen and what patients we might lose." According to the participants, this lack of equipment can significantly worsen the life-threatening conditions of trauma patients.

Another organizational concern emphasized by the participants in this study was the shortage of human resources. Participant number 6 mentioned in this regard, "Ninety percent of my concern and upset is because of my solitude in the back cabin and my ineffectiveness alone. Sometimes, the patient's Endotracheal Tube came out because I was alone, and the next time, no matter what I do, it does not work."

Feelings of inadequacy and distress due to resource shortages lead to a decline in the performance of pre-hospital emergency personnel. In such situations, they admitted that their care was ineffective due to stress and fear.

2. Efforts for Resilience and Mastery over Conditions

In the face of the experiences of caring for patients amidst the shadow of fear and stress, pre-hospital emergency personnel strive to exert control over the situation and manage their mental state due to their sufficient experience. Embracing spiritual beliefs, driven by a belief in a greater force, can enhance their mental resilience. On the other hand, efforts to manage the scene and tirelessly work to save the patient's life play a crucial role in creating committed care. This mental and emotional resilience, combined with dedicated care, can enhance emergency personnel's self-confidence, ultimately enabling them to cope more effectively and navigate challenging situations.

2.1. Efforts for Building Psychological and Emotional Resilience

Pre-hospital emergency personnel's psychological and emotional resilience is considered a crucial factor in enhancing performance and improving the quality of healthcare services. This attribute can lead to increased self-confidence among emergency personnel, heightened motivation and enthusiasm for their work, and improved communication between them and the patients. Ultimately, this contributes to more effective and efficient care provision.

In this regard, Participant 1 expresses: "If I lose a patient, I feel much psychological pressure. After the shift ends, I try to take a walk or take a cold shower to relieve these negative feelings. I tell myself that I did my best." This demonstrates the technician's effort to adapt to the circumstances. The endeavor for adaptation among pre-hospital emergency personnel encompasses a set of strategies and methods aimed at enhancing an individual's ability to cope with stressful situations, maintaining performance quality, and improving efficiency during critical conditions. By implementing these strategies and approaches, emergency personnel can provide the best possible care to patients in critical situations. As a result of effectively adapting to crises, their self-confidence increases, and they feel capable of mastering challenging circumstances.

Another factor many pre-hospital emergency personnel often turn to when they feel powerless is their

spiritual beliefs. They claim this practice leads to a sense of resilience because believing in a higher power creates a sense of tranquility in challenging conditions. Consequently, this spiritual empowerment enables personnel to select the most effective coping strategies when facing traumatic and challenging events. In this context, Technician 9 states, "When all my efforts prove futile, I simply put my trust in God, and this action creates a sense of strength within me, reassuring me that there is still a way."

Committed Care

Alongside efforts to develop spiritual and psychological resilience, committed care can foster resilience and mastery over circumstances. Employees who diligently undertake their responsibilities and put forth their utmost effort in managing scenes and saving patients demonstrate better decision-making, more effective collaboration, increased self-confidence, a heightened sense of resilience in the field, and a mastery of the existing conditions. In line with this, Participant 7 states, "Sometimes, it has happened that due to the patient's condition, I know they will not make it back. I have been in the worst conditions, but until the very last moment, I did not give up trying. There may be a one percent chance the patient might return."

Alongside their efforts to save patients' lives, scene management is one of the most crucial skills that emergency personnel must be proficient in. This is because they must professionally and effectively oversee the scene in critical and high-pressure situations, ensuring they manage the incident site in the best possible manner to provide services to patients and casualties.

Regarding the effort to manage the scene and subsequently achieve control over the situation, Participant Number 9 states: "Before entering the scene, we mentally reconstruct it and prepare the necessary equipment. When we arrive at a critically ill patient, we quickly organize and manage the scene. When the patient's family is troubled, and bystanders are confused and stressed, our entry onto the scene swiftly brings order, and we promptly refer the patient to a medical facility."

One of the most significant aspects that many technicians have noted is the effort and struggle involved in saving a patient's life. Overall, the dedication and seriousness in pre-hospital emergency scenes imply striving to save the patient's life while conserving precious time.

Participant 3 expresses their emotions in such situations: "Personally, when I am right over the patient, I feel like it is a family member of my own. No matter how much I know and am capable of, I put everything into the patient. There have been times when we drove at very high speeds to reach the patient as quickly as possible. Our goal is to save the patient's life at any cost."

Dedicated care ultimately arises from the technician's effort and seriousness. This type of care, as practiced by EMTs, improves service quality. It reduces response time in critical situations, making them feel in control of the conditions and enhancing their practical efforts.
The experience of EMTs is a combination of feeling stressed and fearful while providing care, followed by efforts to control the situation. Based on their accounts, technicians typically find that the more work experience they have and the stronger their support system is, the better they can handle these high-pressure conditions initially for the patient and subsequently for themselves. However, there have been instances where these efforts to control the situation have not proven effective, leading to significant stress both at the scene and afterward.

Table 1: Demographic characteristics of the participants

Participant	Gender	Age	Marital status	Education	Work experience (years)
P1	Male	45	Married	Bachelor's	20
P2	Male	33	Married	Associate's	10
P3	Male	34	Single	Bachelor's	12
P4	Male	42	Married	Associate's	16
P5	Male	44	Married	Bachelor's	13
P6	Male	54	Married	Bachelor's	28
P7	Male	44	Married	Associate's	18
P8	Male	26	Single	Associate's	3
P9	Male	25	Single	Bachelor's	2
P10	Male	27	Married	Bachelor's	4

Table 2: Themes, subthemes, and sub-subthemes from analysis of data

Theme	Subthemes	Sub-subthemes
• **Caring in the Shadow of Fear and Stress**	• Compromised Care	• Disrupted care under ineffective oversight
		• Operating within an unfavorable cultural environment
		• Lack of personal safety and preservation of human dignity
	• Psychological Burden Resulting from Limitations	• Dissatisfaction with performance due to resource shortages
		• Feeling unsupported
• **Striving for Resilience and Mastery over Conditions**	• Efforts to Build Mental and Psychological Capacity	• Striving for adaptation
		• Turning to spiritual beliefs
	• Committed Care	• Determination and struggle to save the patient's life
		• Technicians' efforts to improve their knowledge and mental resilience for better trauma scene management

Discussion

The results indicate that the experience of EMTs in caring for patients with life-threatening trauma is complex. This study's main findings (themes) suggest that care takes place in the shadow of fear and stress while simultaneously striving to gain control over the situation. In other words, the experience falls within the spectrum between these two extremes, and due to existing challenges, such as a lack of support, inadequate and insufficient resources, and ineffective coping mechanisms, it often leads to a decrease in the quality of care for these patients.

In this study, care taking place in the shadow of fear and stress is attributed to various factors, including high and constant pressure, inadequate resources and equipment, the witnessing of certain harsh and horrifying realities, lack of support and encouragement from managers, as well as insufficient interaction and effective collaboration among healthcare team members, and inadequate understanding of each other's needs.

Providing care to patients with life-threatening injuries affects EMTs. This experience negatively affects their mental health and job satisfaction.[25] Their experience includes individual tensions and needs that can potentially lead to traumatic injuries,[26] resulting in incapacitation. These experiences are due to facing severe injuries and sudden death, especially among vulnerable victims (children).[27,28] EMTs, especially when confronted with the death of a child, experience intense emotions and are often unable to express them to others.[29,30]

According to the perspectives of EMTs, working in the field of medical emergencies has a considerable impact on their emotions and personal lives. At times, the experience of a patient's death after life-saving interventions is a traumatic experience, especially when they are faced with the patient's family members or in cases involving the death of a child or adolescent, which can lead to adverse emotional reactions.[31] In our study, EMTs at scenes of care for severely traumatized patients have had numerous distressing experiences, sometimes unable to express them. They have also acknowledged that these bitter and unpleasant experiences disrupt their decision-making and create challenges in patient care, especially when dealing with injured children, pregnant women, or women in general. This is due to the existing cultural context where prioritizing the care of children, adolescents, and pregnant mothers, and experiencing emotions while dealing with them, can potentially lead technicians to make errors in intervention. Other studies have also confirmed that EMTs facing unpleasant scenes experience a range of consequences, such as insomnia, depression, and increased blood pressure. As a result, the quality of care decreases, and clinical errors increase due to these issues. [32-34]

Among other experiences discussed by EMTs in this

study, there is a disruption in providing care due to the involvement of companions and individuals at the scene. A study has shown that one of the important risk factors for post-incident stress disorder in EMTs is the likelihood of physical harm resulting from being present at the scene.[35] Participants have repeatedly admitted that the lack of awareness of the patient's companions about life-threatening conditions, disruptions in patient transfer, inappropriate interventions, and insults directed at EMTs have led to disruptions in care. In a study by Ahmad Ramadan and colleagues in Saudi Arabia, reports of threats of violence or legal claims from patients and their families were also documented.[36] The fact that despite providing necessary care, EMTs are threatened or attacked can create a sense of despair among them,[37] which has been frequently highlighted in our study as well.

Another experience highlighted in this study is the lack of adequate and suitable equipment, the insufficient number of bases, staffing shortages, the absence of a skilled team, and inadequate organizational infrastructure. Alongside equipment and staffing deficiencies, the lack of sufficient support from senior officials and managers, inadequate income, heavy shifts, inadequate communication within the medical team, and neglect of the morale of EMTs were also experiences shared by this group of workers. In a qualitative study conducted by Froutan and colleagues in 2014 titled "The Unique Experience of a Pre-Hospital Burn Care Mission," equipment shortages, lack of support from senior managers, and disregard for EMTs' concerns were two subthemes identified. This study demonstrated that a lack of access to appropriate equipment leads to disruptions in the provision of proper care. [38] Furthermore, a study conducted by Day and colleagues in 2021 found that the presence of equipment, facilities, and supportive resources plays a crucial role in enhancing technicians' psychological readiness and performance in delivering appropriate patient care.[39] Additionally, the results of studies by Crowe and colleagues in 2020 showed that social support, proper supervisory feedback, organizational support, and adequate compensation can reduce job burnout in EMTs,[40] which aligns with the findings of the present study.

Another central theme of this study is the effort to build resilience and mastery over conditions, which resulted from EMTs' attempts to adapt to traumatic crises, giving them a sense of psychological and emotional capability. Participants acknowledged that they try to use strategies such as walking, listening to music, talking to friends, etc., to control stress and gain mastery over traumatic crises. In support of this notion, Lazarus and Folkman referred to coping strategies as processes that control and manage stressful situations, demonstrating that using these strategies creates a sense of control and mastery over the situation in EMTs. [41] Additionally, another study showed that the perception and control of stress in EMTs can play a protective role in accepting difficult situations and enhance their resilience, ultimately leading to effective and efficient actions with patients.[42] Furthermore, other research has shown that EMTs employ various tactics to cope with stressful events, including empathizing with the patient and connecting with individuals who can help them express their emotions. [43-45]

Another sub-theme of this study is dedicated caregiving, which emerged due to proper scene management and the dedicated efforts of EMTs to save patients' lives. When faced with challenging conditions in providing patient care, EMTs believe they must prioritize patient care in emergencies. They mentally and emotionally prepare themselves before entering the scene and ensure they are physically ready for life-saving interventions. This illustrates EMTs' sense of responsibility towards their profession.[46] In this study, EMTs admitted that they would mentally reconstruct the scene before entering and prepare all necessary equipment, even mentally preparing themselves to confront unfavorable conditions. This finding is supported by the study conducted by Farias et al.[47] Furthermore, participants acknowledged that they exerted their utmost effort to save patients' lives, to the extent that they experienced severe fatigue and physical pain even after providing care at the scene. The study by Campion et al. in 2017 demonstrated that EMTs increase survival rates and minimize patient adverse outcomes through their rapid and effective performance, as well as diligent efforts.48 Effective scene management is crucial in pre-hospital life-saving operations, involving pre-scene readiness and scene reconstruction, optimal prioritized interventions, scene safety, stress management, collaboration and communication with other entities, and patient evaluation.[49]

Among the limitations of this study, it is worth noting that some participants were unwilling to share their

experiences. The researcher tried to address this limitation by clearly stating the research objectives and selecting individuals with rich experiences who were more willing to cooperate. Additionally, some researchers consider the lack of generalizability a limitation, while qualitative researchers argue that this characteristic is inherent to qualitative research rather than a limitation.

Conclusion

Based on the results of this study, the themes of "Care in the Shadow of Fear and Stress" and "Striving for Resilience and Mastery in Conditions" emerged as fundamental aspects in the lived experience of pre-hospital emergency service personnel providing care for patients with life-threatening trauma. "Caring in the Shadow of Fear and Stress," which results from facing traumas, signifies that technicians are overwhelmed during care and, afterward, burdened with a multitude of pressures. In certain situations, they may be unable to cope with such intense stress and pressure, hindering their ability to provide effective interventions. This issue stems from creating unpleasant reactions and emotions when confronted with patients experiencing life-threatening trauma, interfering observers, a lack of support from higher-ups, and resource scarcity. To address this challenge, it is recommended that appropriate techniques be employed to minimize the impact of witnessing distressing scenes on these individuals. Additionally, training should be provided to the general public and healthcare professionals on scene management to control interfering observers, and a culture of support should be cultivated. Furthermore, authorities' efforts in upgrading equipment resources and supporting operational staff can significantly contribute to resolving this matter. On the other hand, the effort to build resilience and mastery over circumstances has been highlighted as another central theme in this article regarding the lived experience of EMTs caring for patients with life-threatening traumas. While these efforts are emphasized, there are instances where they might prove ineffective. The emergency system should establish mechanisms for technicians to utilize defense mechanisms and coping strategies in high-stress situations.

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Conflict of Interest Disclosures

Authors declare no conflict of interests.

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Authors’ Contributions

All authors contributed in designing the study, data analysis and interpretation of data. Acquisition of data and drafting the first manuscript was done by NR. Study supervision was done by ZK in whole process and revising and approving the final manuscript was done by NR, ZK, ZM, MNK.

Ethical Statement

This research has the ethics code number IR.SUMS.NUMIMG.REC.1400.039 from Shiraz University of Medical Sciences in Iran. The researcher visited the research environments after obtaining approval from the university's ethics committee and coordinating necessary permissions. They introduced themselves and explained the participation criteria to the emergency operational personnel. After voluntary agreement to participate, the participants were contacted to schedule meetings. Participants had complete autonomy to withdraw from the study at any stage.

Before data collection, written informed consent was obtained from each participant, ensuring confidentiality, anonymity, and data security. Additionally, participants were asked for written permission to record the interviews, as recording was deemed necessary to ensure accuracy in preserving the content. The timing and location of the interviews were determined based on the participants' preferences and convenience outside of their work shifts. The duration of each interview was adjusted according to the participants' comfort. The researcher gave the participants their email and phone number for communication purposes.

Declaration of Generative AI and AI-assisted technologies

None to be declared.

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