Workplace Violence Process against Emergency Medical Services Staffs: A Grounded Theory

Majid Pourshaikhian[1,2], Davood Khorasani-Zavareh[3,4], Hassan Abolghasem Gorji[1,5], Aidin Aryankhesal[1,5] & Ahmad Barati[1]

[1] Department of Health Services Management, School of Health Management and Information Sciences, Iran University of Medical Sciences, Tehran, Iran

[2] Social Determinant of Health Research Center, Guilan University Medical Sciences, Rasht, Iran

[3] Department of Health in Disaster and Emergency, School of HSE, Shahid Beheshti University of Medical Sciences, Tehran, Iran

[4] Department of Clinical Sciences and Education, Karolinska Institute, Stockholm, Sweden

[5] Health Management and Economics Research Center, Iran University Medical Science, Tehran, Iran

Correspondence: Aidin Aryankhesal, Department of Health Services Management, School of Health Management and Information Sciences, Iran University of Medical Sciences, Tehran, Iran. Tel: 98-9124966346. Fax: 98-21-8888-3334. E-mail: a.aryankhesal@gmail.com

Abstract

Background: Workplace Violence (WPV) is an undesirable social phenomenon that threatens patients and staff safety and work environments. Despite the high prevalence of WPV and its serious consequences, limited studies have been conducted on its roots and formation in pre-hospital emergency. The aim of this study was to explore and explain the process of workplace violence against emergency medical service personnel.

Methods: This qualitative study was performed using grounded theory approach in 2015. The study participants included 17 Emergency Medical Service (EMS) staffs working in Tehran and Guilan provinces, Iran. Data were collected by semi-structured interviews and analyzed using the Strauss/Corbin approach and constant comparative method. The paradigm model of WPV is presented in this study.

Results: "Serving within the context of workplace violence" was presented as the main theory. Five main groups of paradigm model theory were identified as triggers, context, and intensifiers of violence, copying strategies, and outcomes. The important consequences of violence include physical and psychological health injury of staff in the process of service delivery.

Conclusions: Despite their repeated exposure to violence and its consequences, EMS staffs usually fulfill their main role and perform their tasks. Training of stress management, familiarizing the community with the responsibilities of EMS, reducing response time, creating efficient communication systems, using appropriate facilities and manpower, training violence control, improving employees' job satisfaction, and coordinating cooperation with the police can reduce workplace violence. The supporting of the WPV victims is essential to improve the health and safety of EMS staff.

Keywords: workplace violence, pre-hospital emergency services, EMS staffs, grounded theory

1. Introduction

Violence is an undesirable social phenomenon on which humankind has usually no successful control. Workplace Violence (WPV) is one of the important types of violence and may include harassment, threats or attacks that staff encounter in the workplace and threatens their safety, well-being and health. It can generally be divided into two types: physical and psychological (WHO, 2003).

Pre-hospital EMS is an important part of health system that provides timely care to victims of emergencies and life-threatening injuries in order to prevent mortalities or complications (Al-Shaqsi, 2010). Most people who make use of EMS have degrees of physical and psychosocial injuries, and are ready to make abnormal behaviors, including violence (Suserud, 2002). The frequency of WPV against EMS staffs is high (Petzäll, 2011;

Sheikh-Bardsiri, 2012). In two separate studies, it was shown that 80.3% and 66% (respectively) of ambulance staff faced with threats and/or violence, during one year (Suserud, 2002; Petzäll, 2011).

Such jobs, in which health care providers faced with nervous and worry patients or their relatives, are very prone to WPV (Hahn, 2013; Koritsas, 2010) and serious occupational health problems (Blando et al., 2012), resulting in individual (psychological and physical), social and organizational consequences (Shahzad, 2014; Steffgen, 2008). Including the consequences of workplace violence, decrease of well-being and quality of life of staffs (Petzäll, 2011) as well as care of clients (Gates, Gillespie, & Succop, 2011).

The basic theories of violence include frustration, social learning, general pattern of violence (Atkinson, 2008), violence vs. non-violence, inequality, subcultural and ecologic theory (DeKeseredy, 2006). Also, it is presented theories of WPV, including the "remaining marked for life", "direct correlation between organizational effects and creating a safe environment", "managers' self-awareness, and the contributing factor toward moderating WPV" (Carroll-Garrison, 2012; Florence, 2009; Hallberg & Strandmark, 2006). Although, some safety measures are designed to reduce WPV in hospital emergency departments, little studies have focused on pre-hospital emergency settings, with its principally unpredictable and unstructured environment. Hence, studies that explain the process of WPV are yet to be carried out. Based on the necessity of exploring the workplace violence process, our qualitative study aimed to explain the process of WPV, so that the results provide a basis for the promotion of safety, health and efficiency of the EMS personnel.

2. Methods

2.1 Design

This study was conducted to explore the process of WPV in pre-hospital emergency setting using the Strauss/Corbin systematic approach grounded theory of providing the paradigm model (Cresswell, 2012) in 2015. Such methods are often followed when there is no theory that defines a social phenomenon (such as WPV), or there is little information on the interested inquiry (Hancock, 2009).

2.2 Study Setting

Pre-hospital EMS staffs in the provinces of Guilan and Tehran, Iran were studied for their paramedics' experiences around WPV. Pre-hospital EMS centers across Iran are under the direct supervision of the Ministry of Health in Tehran and are affiliated to the Universities of Medical Sciences in provincial capitals (Haghparast, 2010). The centers have hardware and well-educated staff to fulfill their mission (Iran, 2007). In this system, the educated staffs arrive at the event scene after a call from the people or other relief organizations and provide the first interventions or, when needed, transfer clients to the medical center by ambulance (EMS., 2012). This research environment included EMS bases and emergency scenes where WPV may occur in the aforementioned contexts.

2.3 Study Participants and Data Collection

The participants in this research included EMS staff with at least two years of work experience and who were victims of WPV. Purposive sampling was used in the first interviews and after the 8th interview; theoretical sampling was used to find the pieces of the theory puzzle. Participant's selection, data collection and analysis were continued until data saturation (no new experience to the phenomenon of WPV). Thus, 17 persons were interviewed, aged 25 to 55 years (mean±SD: 36.17±7.07), with a work experience of 2 to 22 years. The educational level of the participants included one high school diploma, 14 associates or bachelor's degrees, and two master's degrees. The major participants of the study were the victims of violence when deployed to the scene to provide EMS to traumatic or non-traumatic patients. Semi-structured interviews were used as the main method of data collection. The interviews were carried out in the workplace (the real arena of incidence of WPV), with duration of 22-92 minutes (mean±SD: 54.71±22.29). The questions focused on the "description of experiences of participants encountering WPV", "the way WPV occurred", plus the questions about "the role of other relief organizations", "socioeconomic-cultural contexts" or "how to respond to violence, and the consequences". Interviews were recorded by a voice recorder. Also, observation, notes from documents and field notes were used.

2.4 Data Analysis

Data analysis started after the first interview; thereafter the second interview was conducted and analyzed alongside the first interview and so on. The data analysis was conducted by spending so much time and immersing in the data, in three stages of open, axial and selective coding. Data were coded and conceptualized, the associations between codes were identified and similar codes were classified as clusters from which the groups and subgroups emerged. With constant comparison, the relationship between concepts and variables was

studied and the overlapping themes were integrated. Then, the number of groups decreased and the variables and substantive process were determined with appropriate titles given to them. Analysis process was assisted by MAX Qualitative Data Analysis MAXQDA10. Finally, based on a systematic grounded theory approach (Cresswell, 2012), using paradigm model, the components of the model, as well as the categories of causal, contextual and intervening conditions, and strategies and consequences of WPV process were identified through the axial coding. In selective coding, the core category, which is responsible for most changes in the pattern of the data analysis and has systematic relationship with the other parts, was presented as a graph (page 4).

2.5 Rigor

The validity of the research was investigated through, constant comparison, long transition time, member check, peer check, and triangulation (Adib Hajbagheri, 2013). The researchers of the study included a specialist in health Policy and management (AA) and a specialist in safety promotion and injury prevention (DKZ) both experienced in qualitative research, one PhD student in health in emergencies and disasters (MP) and two specialists in health services management (HAG & AB). Constant comparison was performed to confirm the codes and groups, and the new groups were developed with recursive approach. The coded concepts were provided to two of participants in order to evaluate and verify if the findings were in line with their experiences and a consensus was achieved on codes and themes (member check). Two colleagues, who were familiar with the grounded theory analysis, helped in the data analysis (peer check). For data collection, interviews, observation and documents were used and the data were analyzed by three researchers (triangulation).

3. Model Development (Findings)

In this study, "service delivery in the context of workplace violence" emerged as the core category and the main focus. This means staffs; always try to provide service to clients, even when faced with workplace violence. The five main groups of paradigm model of WPV against EMS staff included causal, contextual and intervening conditions, strategies, and consequences (Figure 1).

3.1 Causal Conditions

The main category of causal conditions was "triggers of violence" that included two groups: "event shock" and "delayed response time".

Event shock: Prevalence of severe unexpected event such as illness or trauma, which may be mild, severe and fatal, may cause anxiety and agitation, resulting in unpredictable and uncontrollable behavior such as violence. In such conditions, EMS staffs are required to respond to the emergency event as soon as possible, as part of their job:

"Cause of the unexpected accident at critical moments, the father of the victim could not control and keep calm *him anymore. Well, their beloved ones had an accident that led to the issue of violence"* (participant 1).

Delayed response time (RT): One of the major causes of WPV is the delay in response, which can be due to delay in requesting for help, the imagination of delay, unrealistic expectations and actual delays in the arrival of EMSs. Due to anxiety resulted from the unexpected events, time passes slowly for those relatives of the victim. On the other hand, people expect that the ambulance reaches the scene immediately after the call to 115, but it will take so much time to send-out the ambulance if they should call the dispatch center. WPV due to late RT can be attributed to the distance between the place of accident and emergency rescue base, and further delayed due to staff negligence and the lack of resources including the availability of a ready ambulance:

"(People) want us to be there immediately after the accident. That's impossible, even if we are on track. They think that we should get there as soon as they call (115). Early arrivals are very important and effective, because 90% of conflicts are due to our delays. We arrived 10 minutes after the accident (on the scene)" (participant 5).
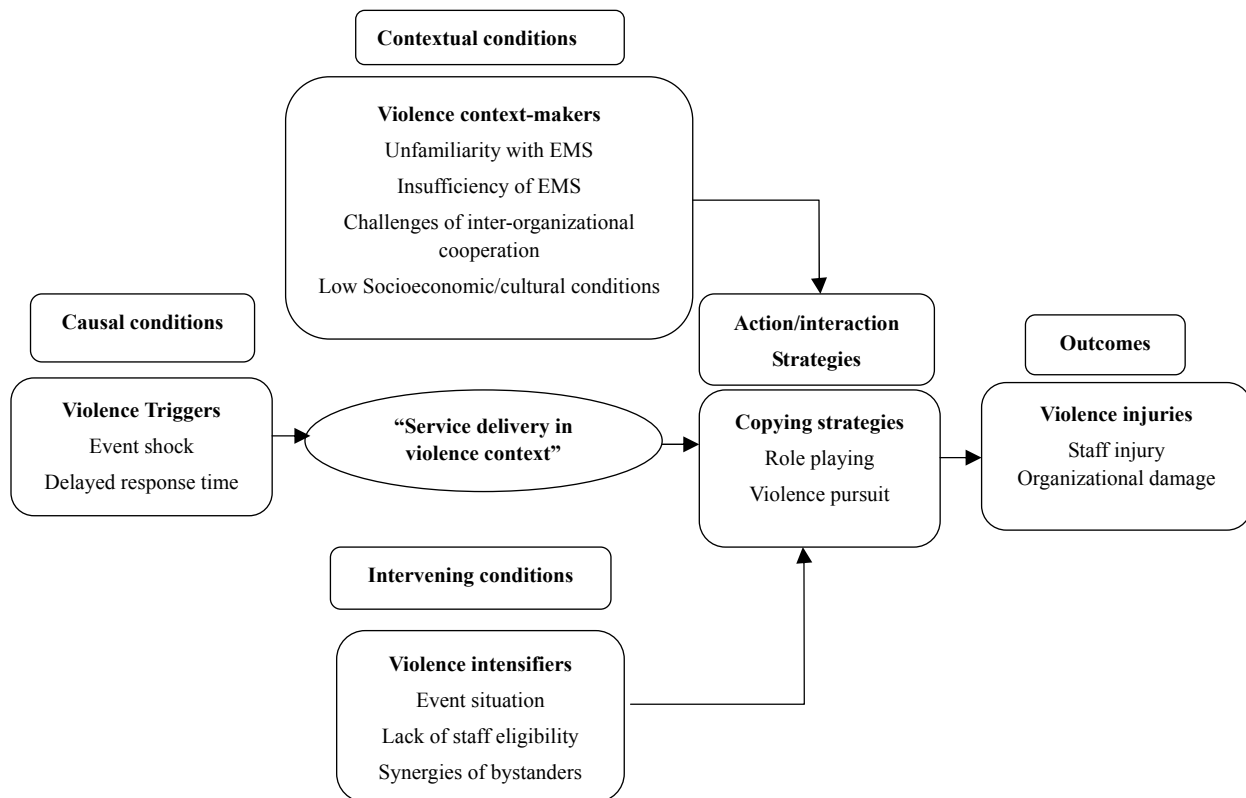
Figure 1. The Paradigm Model of workplace violence process in EMS setting

Other factors of delay in RT include inefficient communication system, address challenges, traffic and the impossibility of using the global positioning system (GPS). The weakness of cell phone communication infrastructure with the dispatch centers in cities, as well as the lack of an efficient professional mobile radio (PMR) system, can cause delay in RT. However, high-traffic routes can cause delays in the arrival of the ambulance to the emergency scene. Also, incomplete or wrong address-giving by the clients and absence of navigation system can cause a delay in finding the exact place of the accident:

"Because of long distances and bustle of traffic while on a mission, when we arrived at the scene, one of (the people at the scene) said rigorously:" Sir, must the patient die before you come? Actually, we had reached the scene in 9 minutes. But city traffic made us delay" (participant 8).

3.2 Contextual Conditions

Contextual conditions are conditions that affect strategies, and WPV occurs in their context. This category, entitled "Context-makers of violence" includes four subgroups as follows: unfamiliarity with the EMS duties, insufficiency of the EMS organization, challenges of inter-organizational cooperation, and poor socioeconomic and cultural conditions.

Unfamiliarity with EMS duties: The inadequate knowledge of EMS duties by clients is the reason for the notion that the role of EMS is merely for the quick transfer of patients. Occasionally, the request for transferring non-emergency patients or request to transfer to a private hospital resulted in WPV:

"As I put my hand to feel the patient's pulse, someone said firmly: "take and transfer him". I wanted to seek the emergency doctor's opinion on the phone, but patient's family firmly said: "What do you think, sir, take and transfer him." (participant 8)

Insufficiency of the EMS organization: One of the contextual factors of WPV is the Insufficiency of EMS organization, regulations and how to manage the organization. Impaired communication between ambulance staff and the relevant centers can cause violence. The shortage of ready EMS bases and ambulances at the appropriate intervals cause delay in RT and is an underlying factor for violence. Inadequate ambulance medical equipment's limited the possibility of the staff skills and puts them at risk of aggression. On the other hand, the employment of staff without general and professional competencies is another predisposing factor to WPV.

Emergency staff has no defense equipment's such as protective and anti-penetrating clothing and pepper spray to protect them when faced with violence. Also, in many cases, when faced with violence or injury, no support is provided for follow-up and care of the staff. Sometimes, the EMS staff has insufficient incentives to carry out their duties due to insufficient rights and benefits that affect the provision of optimal EMS, thereby predisposing them to violence:

"We did not get there timely. We have our own limitations. We were on another mission that moment and came from a remote base and as such, arrived late. The number of ambulances is not enough and there was traffic and the time to reach the emergency scene is more than what people expect (participant 10). *"I like my job. With 8 years of experience, I do not have job security. I am dissatisfied with the rights and benefits. We are in touch with people's lives, which have influence on our mentality"* (participant 15).

The challenge of inter-organizational cooperation: The performance of other organizations, such as the Ministry of Roads and urban development, Ministry of communications, Police, Red Crescent, and Fire agency are effective in achieving quality emergency medical services. The provision of infrastructures and cooperation for desirable performance of EMS duties is of peculiar importance. Lack of necessary infrastructure for telephone and mobile radio communications impair the coordination between the staff thereby resulting in loss of time and prevalence of WPV. In some scenes that need police cooperation to clear the route for the ambulance and secure the scene, lack of inter-organizational coordination causes violence and injury to staff. Also, lack of coordination between pre-hospital and hospital emergency and the Red Crescent and Fire agency, cause violence against staff of each of the aforementioned organizations:

"We transferred the patient with double legs fracture to the Poursina hospital and I told the nurse that "the patient has a fractured leg and so take care of him", but she started insulting us. Sometimes the emergency nurses fight us and say the case is not urgent, thereby resulting in tension between us, the nurses and the patients' relatives" (participant 12).

Low socioeconomic and cultural conditions: The incidence of public reactions (such as violence) is more in social environments with poor culture, education, socioeconomic status, and greater social ills. Also, inadequate trust to governmental health system prevents most EMS staff from applying their skills in the scene and so is faced with violence:

"In poor cultural contexts, there is more violence and we are attacked as soon as the ambulance reaches. But they usually apologize later and this reflects cultural weakness" (participant 17).

3.3 Intervening Conditions

Intervening conditions are a series of conditions that affect strategies. In the present study, "violence intensifiers" were identified as the main category with three groups, including "situation of the event", "lack of staff eligibility" and "synergies of bystanders".

Situation of the event: In special places with undefined protective and security structure, at certain hours of the day, more violence tends to occur:

"The time of the ambulance mission is also involved in the prevalence of violence. For instance, it is more at nights. After midnight is more. Considering location, more violence is seen in homes and at accident scene" (participant 12).

The incompetence of EMS staff: In some cases, due to scene conditions and anxiety of the clients, inappropriate staff behavior and technical performance of the dispatch ambulance staff cause complications for the patient and develops violence against staff. Also, mistake or negligence in performing duties and fatigue of staff due to the high number of missions are involved in violence prevalence:

"Sometimes, the high numbers of missions affect our performance. When we are to perform 17 missions/day, the first ones are well performed, but as the number increases, especially in the last missions, the quality of our work is affected and as such our clients express discontent" (participant 16).

Synergies of bystanders: Sometimes after an unexpected event, the interventions or showoff of the bystanders of the client's families exacerbates the prevalence of violence. Also, high risk groups, such as people with history of drug abuse, alcohol, psychedelic agents and aggressive and irresponsible people with criminal records, are involved in the strengthening of violence. On the other hand, people who, for whatever reason, were not successful in their lives, or were dissatisfied with the government's performance, show their frustration and dissatisfaction as violence against EMS staff.

"I went on a mission to the scene of an accident, people worsened the situation and made the atmosphere tense

and did not allow us to work comfortably" (participant 1). *"The perpetrator of violence was not a modest man and was drunk. His movements did show it; he was not a stable person .He insulted us and showed aggression against us"* (participant 8). *"They regarded us as an available governmental organization, so they attacked us and showed violent behavior. People who were angry with the government attacked us, and emptied their emotions"* (participant 5).

3.4 Action/Interaction Strategies

Strategies are a set of actions/interactions that are driven around the core phenomenon. In this study, "coping strategies" were identified as the main category with two groups: "role playing" and "the pursuit of violence".

Role playing: EMS staffs focused on providing optimal services by ignoring violence against them, exhibit self-control and manage violence by strategies, including explaining, convincing, relaxing, confidence and self-defense techniques, such as leaving the scene, keeping away, and building trust, accepting demands of the clients, taking refuge to people and seeking the cooperation of the perpetrator. Another strategy involves coordination and cooperation with the police, which plays an important role at the scene to prevent violence or reduce injury:

"We heard the insults, but did not reply. Because if we had wasted time to see what they are saying and reply, the patient may have died. Our focus was on our duty. We said: OK sir, well, wait and tell me first what the problem of the patient is? We can talk later. We should first carry out our work" (participant 11).

The follow-up violence: These strategies include reporting violence, protecting victims of violence, and apology of violence perpetrators. In some cases, victims of violence, especially in cases of physical injury, report violence to their supervisor for follow-up and expect support which depends on the sensitivity of the supervisor and policy of EMS organization. Also, in some cases, violence is not reported for various reasons, including lack of consideration of violence report in the checklist of ambulance mission, fear of negative judgment of managers and so it is considered useless. The strategy of EMS management is to advise staff not to confront violence, and in the event of violence, support the staff on their decision. Judicial support for violence victims is another strategy used to follow-up violence. On the other hand, in numerous instances, the violence perpetrator realizes his ruthless behavior and apologizes after the initial stress has subsided:

"If you report it, they will say the person is moody. I once reported stabbing to the center's manager, but he did not do anything. Our staff was stabbed on a mission, but the emergency center (still) did nothing" (P$_8$). *"I sued the perpetrator for insulting and stabbing. The judge entered my complaint and charged the attacker to 1000 dollars blood money and a fine of 30 dollars for insulting and beating a government official who knows nothing against the committed crime"* (participant 11).

3.5 Consequences

In the present study, the category of "injury of violence" was identified as the main category, while injury of staff and damage to organization were identified as the consequences categories. Exposure to physical and verbal violence puts EMS staff and organizations at risk of significant consequences.

Staff injuries: One of the important outcomes of WPV is injuries on staff. The EMS staff injuries include a variety of physical and psychological injuries, which they suffer from in the process of service delivery. Although physical violence is relatively less common than verbal, it is dangerous and is associated with more serious physical injury such as perforation of superficial or deep parts of the body, bleeding, weakness, and syncope, a variety of trauma, paresthesia and blurred vision. On the other hand, physical and verbal violence cause psychological injuries such as anxiety, stress, and insecurity, which finally affect motivation to deliver service:

"The Father of the patient tapped my back, so I fell and my forehead was injured and I had to keep a cervical collar around my neck after the accident, up to a week. In another case, I was stabbed in the abdomen with a knife that created an 8-cm opening" (participant 4). *"When my file came up in court, I was engaged for a year and was hurt psychologically; now after three years, it still annoys me anytime I remember"* (participant 13).

Organizational damages: An important consequence of WPV is EMS organization damage such as injury to the human and financial resources. Violence reduces staff motivation, causes absenteeism, and temporary or permanent quitting of jobs. In some cases, violence damages the organization property, particularly the ambulance:

"My coworker asked with certainty: "What are you saying? We moved quickly after the mission was announced". After this sentence, someone slapped his face and he was upset and began to cry. The next day he quitted the

EMS (left the job)" (participant 16).

4. Discussion

The theory of the present study showed that the main focus of EMS personnel, at the scene of emergencies and in the context of WPV, was to access the client and deliver services within the job description. Unfamiliarity of the society with the duties of EMS, incompetence of EMS system, the challenge of inter-organizational cooperation, and undesirable socioeconomic and cultural status were involved in the occurrence of violence in cases of unexpected events, which resulted in crisis and lack of access to acceptable medical services at the right time. Ineligibility of the EMS staff and synergies of bystanders triggered the occurrence of WPV. In such conditions, EMS staff used the copings strategies in cases of violence to continue their duty; however, they faced the consequences, especially health injury. The major findings of this study were compared and discussed with the results of other related studies.

4.1 The Lack of Self-Control

Low tolerance threshold of people - especially in societies with undesirable socioeconomic and cultural status -causes agitation and uncontrolled behavior including violence, when they faced with stress due to the prevalence of the acute disease or severe trauma. This issue is consistent with the basic theories of violence such as frustration theory, failure-aggression, social learning (Atkinson, 2008), the theory of social inequality and ecologic model (DeKeseredy, 2006). In a related quantitative study, the event of illness or trauma (Piquero, Piquero, Craig, & Clipper, 2013), despair of treatment (Petzäll, 2011), death of the patient (Bernaldo, 2015; Pourshaikhian, 2016; Rahmani, 2012; Sheikh-Bardsiri, 2012), fear and anxiety (Pourshaikhian, 2016; Sheikh-Bardsiri, 2012), low self-esteem, fast irritability, inadequate control of stimulations, lack of self-control (Bernaldo, 2015; Steffgen, 2008) and coping skills (Shahzad, 2014), the crime-susceptible environment (Esmaeilpour M, 2011; Shahzad, 2014; Steffgen, 2008), and unemployment (Salarifar, 2010) were singled out as the causes of violence. Thus, the use of the capacities of education and media for teaching culture, self-control, keeping calm and increasing tolerance in stressful events is effective for the prevention or control of WPV.

4.2 Delayed Response Time

The major cause of violence in workplace is delay in RT, which can be ascribed to delay in help request, inefficient communication system, conception of a delay, actual delay due to negligence or lack of prepared ambulance, traffic in the ambulance route, the impossibility of using GPS, address challenges, as well as unrealistic expectations. People (given the critical and intellectual backgrounds) expect that the ambulance should be on the scene immediately after making a call to EMS center. Delay in asking for help (Pourshaikhian M, 2008; Xueling, 2013) and RT (Petzäll, 2011; Sheikh-Bardsiri, 2012), responsiveness (Koritsas, 2010) and lack of therapeutic intervention or rapid transfer of patients (Sheikh-Bardsiri, 2012) are factors affecting delay in RT and are known to be the major cause of WPV. Thus, the establishment of an efficient communication system, the provision of adequate facilities for EMS, public education regarding EMS duties and the consideration of special routes for the ambulance reduce the RT and occurrence of violence.

4.3 Unfamiliar with Ems Tasks

Unfamiliarity with EMS role causes distrust. Under such a condition, the EMS staffs are considered as merely the transmitter of patient using an alarm car, while EMS staff shall then investigate and take immediate interventions, and in the case of emergency diagnosis, transfer the patient to the first state hospital. Often, these processes are considered a waste of time and can cause violent behavior against the staff. In related studies, lack of awareness on the role of EMS (Rahmani, 2012; Saberinia, 2013; Sheikh-Bardsiri, 2012), disagreement with treatment interventions (Bernaldo, 2015), lack of appropriate treatment (Sheikh-Bardsiri, 2012), unacceptance of services (Piquero et al., 2013) and not meeting the expectations of clients (Baydin, 2014), were reported as the contextual factors of violence. Therefore, familiarizing the society with the structure, capabilities and pre-hospital emergency tasks using the capacity of education system and the media can be very helpful in reducing the incidence of violence against EMS staff.

4.4 Inability of EMS System

Inability of the EMS organization to provide navigation system, human resources, ambulance and sufficient medical equipments cause disruption in tasks and predisposes the staff to violence. The shortage of ambulance equipments and facilities (Kazemneghad, 2015) poses negative effect on staff' performance. Using staff with inadequate general and professional eligibility in dispatch centers and ambulance that cannot be used to manage violence or have no desired psychological balance, predispose them to WPV. In various studies, educational level, eligibility and how to assist the clients (Koritsas, 2010), shortage of specialized staff (Sheikh-Bardsiri, 2012),

low experience (Bernaldo, 2015; Koritsas, 2010), insufficient professional training (Baydin, 2014) and low self-esteem (Steffgen, 2008), were reported as the underlying causes of WPV. Also, lack of training program on how to deal with WPV (Baydin, 2014; Pourshaikhian, 2016) and control of violence (Bernaldo, 2015; Brough, 2005; Duchateau, 2002; Petzäll, 2011) have been emphasized. Therefore, EMS managers must provide adequate and appropriate equipment/staff, create and maintain job satisfaction, and organize training on violence control as strategies to reduce WPV.

On the other hand, EMS staffs are not provided with the necessary resources and support for self-defense in the face of WPV. Also, job dissatisfaction and/or lack of adequate job security and inadequate support of EMS organization from the staff; affect the motivation of providing optimal emergency services. In other studies, the use of a protector uniform (Pourshaikhian, 2016), self-defense by dodging and pepper spray (Mechem, 2002; Pourshaikhian, 2016), keeping distance (Suserud, 2002), transferring the aggressive person, use of restrictive agents (Franz, 2010) and need for the police involvement in case of violence were emphasized to establish security (Grange, 2002; Mechem, 2002; Shahzad, 2014). Several qualitative and quantitative studies have confirmed the relationship between job dissatisfaction and violence (Brough, 2005), the effectiveness of violent adjustment policies of the organization's manager to promote safety and prevent injury (Florence, 2009) and enhance the motivation and performance of staff to use copings strategies helped in preventing the outcomes of health injury (Carroll-Garrison, 2012). Therefore, the management of EMS organization should take measures to reduce violence and health injury, whilst (ensuring) job satisfaction and providing equipment for the staff, teach self-defense and cooperate with the police to protect and take care of EMS staff when providing safety service.

4.5 Incompetence of EMS Personnel

As shown in this study, insulting, humiliating or irresponsive behavior, or even aggressiveness towards EMS staff, mistake or negligence in duties, and fatigue caused by the many missions were factors that triggered the development of violence. In related studies, insufficient skills and eligibility (Pourshaikhian, 2016), negligence (Sheikh-Bardsiri, 2012) and how to respond to client (Koritsas, 2010) were pointed out as stimulus of WPV Therefore, dispatch and ambulance staff should prevent the development of violence by being respectful to clients, provide appropriate services and should be questioned in case of negligence. On the other hand, conditions should be provided stating that the number of missions/day is appropriate in order to prevent the over use of staffs.

4.6 Bystanders/Family Synergism

Synergies of bystanders, high-risk groups, psychological discharge of failures, and revenge from government are important factors that resulted in the development of WPV. High-risk groups such as: people with history of drug abuse, alcohol, psychedelic agents, people with criminal history, and aggressive in nature play a vital role in strengthening violence against EMS staff. On the other hand, EMS staffs, as a state organization, are subject to retaliation from the government and are the victims of WPV. The role of high-risk group (Grange, 2002; Petzäll, 2011; Piquero et al., 2013; Pourshaikhian, 2016; Shahzad, 2014; Steffgen, 2008; Suserud, 2002) in strengthening violence was emphasized in similar studies. It is expected that people/spectators of the emergency scene should provide conditions for seeking help from EMS, and service delivery to clients should be done with logic and patience. It is also necessary to create a database, so that with the help of information and reports of previous missions and also the police information regarding high-risk people and environments (violence), the decrease of violence against EMS staff, whose place of service delivery is in the society and in the presence of high-risk groups, can be established in order to efficiently control violence.

4.7 Focus on Perform Tasks

The focus of EMS staff, in conditions of WPV prevalence, is to contribute and deliver service within the framework of the tasks to clients. Ambulance staffs, with regard to event shock, are focused on availability, quick and accurate service delivery with neglect/self-control and consider violent behavior as natural and "part of the job". They always prepare themselves to deal with it and do not report it in most cases. Regarding the value of time in emergency interventions, they believe that if they should respond to WPV in the event scene, it will not only worsen the situation, but will deteriorate the client's condition. In several related studies, WPV is considered a part of the job and normal (Bigham, 2014; Furin, 2015; Grange, 2002; Rahmani, 2012) or unimportant (Sheikh-Bardsiri, 2012) and in most cases, without report (Bigham, 2014; Shahzad, 2014; Sheikh-Bardsiri, 2012) or underreported (Bigham, 2014; Duchateau, 2002; Grange, 2002; Pourshaikhian, 2016) and they invite the perpetrators to relax (Rahmani, 2012). Bigham ascribed the cause of underreporting to lack of time and being away from their role (Bigham, 2014).

EMS staffs on service delivery and management of violence make use of strategies such as persuasion,

relaxation, keeping confidence or self-protection and also requesting the police to attend the scene. Several studies have been mentioned on appropriate behavior, the control of perpetrators (Pourshaikhian, 2016), talking, asking for tranquility (Franz, 2010), the use of protective clothing (Grange, 2002), dodging and keeping distance (Suserud, 2002), limiting the patient, keeping away until help arrives, being located next to the ambulance (Bigham, 2014), change of the perpetrator's place (Franz, 2010) the use of physical or chemical restraint and calling the police to secure the scene (Bigham, 2014; Franz, 2010; Grange, 2002). Hallberg's conceptual model theory on WPV, titled "remaining marked for life" refers to fulfilling duties in the midst of violent incidents for the continuation of normal life (Hallberg & Strandmark, 2006). Also, in Gaffney's theory, titled "making things right in facing violence", the creation of better situation in the context of bullying and paying attention to patient's care were highlighted (Gaffney, 2012). The results of the presented theories of the aforementioned two studies, conducted using grounded theory method, are in line with the results of this study's theory.

4.8 EMS Staff Health Injuries

EMS staffs due to their frequent experience of violence, in addition to feelings of job insecurity, are faced with important physical and psychological injury. Also, WPV decreases the interest on the job, causes burnout, turnover, and feelings of inadequate support, reduce organization's power and ultimately reduce the performance and reputation of the EMS organization. In several related studies, serious personal (Bigham, 2013; Esmaeilpour, 2011; Saberinia, 2013), organizational (Esmaeilpour, 2011; Saberinia, 2013), and professional (Bigham, 2013; Esmaeilpour, 2011) consequences and inadequate occupational safety (Furin, 2015) of WPV have been mentioned. In other related studies, minor and serious physical injury (Mechem, 2002; P, 2007; Rahmani, 2012) (wounds, eye and face injuries, bites, dislocations and fractures, bruises, stretch and scratches) (Mechem, 2002) and psychological consequences such as stress (Gates et al., 2011; Mechem, 2002; Shahzad, 2014), irritability (Mechem, 2002), and headache (Koritsas, 2010), anxiety, depersonalization (Bernaldo, 2015), depression, sleep disorders, irritability, fear of safety (Bigham, 2014; Furin, 2015) and disturbing memories (Baydin, 2014) have been mentioned. Psychological injuries cause social consequences, including impact on social interactions, isolation and personality changes in the workplace (Bigham, 2014).

4.9 Workplace Violence Prevention

Two qualitative studies have emphasized the need to develop strategies to reduce the effects of WPV on the health of staff (Bigham, 2014) and support managers, colleagues, family, friends and law to return to work in the event of injury (Bradley, 2012) were emphasized and complied with the results of this study. Therefore, WPV, especially its important health consequences, is an important pre-hospital emergency issue and an important factor of occupational injury that imposes costs on the health system and society. The supports of EMS and legal organizations for victims of WPV and injuries such as the pursuit and complete implementation of rules 608 and 609 of the Islamic penal code (Maftei, 2010) are necessary to punish perpetrators of workplace violence.

5. Conclusion

Stress caused by an unexpected event, delay in RT, unfamiliarity with EMS tasks, inefficient communication systems, and inadequate facilities & staffing, lack of training courses for staff to manage violence, low job motivation and lack of coordination with the police to attend the scene of the incident caused WPV in pre-hospital emergency. Facing WPV resulted in negative consequences, especially on the physical and psychological health of the staff. The encouraging of EMS staff to report cases of WPV by creating the necessary substrate, such as the consideration of violence reports in the checklist of mission, is very important. Also, the proper support from staff that facing WPV and health injury, such as physical and psychological cares, and legal support to improve staff safety is essential.

For future researches, the development of an assessment tool to predict violence, recognize barriers, report and design attitudes of violence as well as the execution of pre-hospital emergency in interventional studies, is recommended to reduce workplace violence.

Research Limitations

1) Access to all victims of workplace violence was limited due to lack of WPV report.

2) Detailed descriptions of violence experiences in recent years were restricted due to the possibility of recall bias. So, experiences were limited to last year, in order to solve this issue.

3) Access to the perpetrators of WPV was not possible due to lack of cooperation.

Ethical Issues

This study was approved by the Ethics Committee of Iran University of Medical Sciences for Research, and

informed consent was obtained from participants.

Competing Interests Statement

The authors declare that there is no conflict of interests regarding the publication of this paper.

References

Adib Hajbagheri, M. P. S., & Salsali, M. (2013). *Qualitative research methods*. Tehran: Boshra.

Al-Shaqsi, S. (2010). Models of international emergency medical service (EMS) systems. *Oman Medical Journal, 25*(4), 320. http://dx.doi.org/10.5001/omj.2010.92

Atkinson, H. (2008). *Atkinson & Hilgard's Introduction to Psychology*. Tehran: Roshd.

Baydin, A. K. E. A. (2014). Workplace Violence in Emergency Department and its Effects on Emergency Staff. *International Journal of Emergency Mental Health and Human Resilience, 16*, 3.

Bernaldo, P., & Gómez, C. (2015). Psychological consequences of aggression in pre-hospital emergency care: Cross sectional survey. *International Journal of Nursing Studies, 52*(1), 260-270. http://dx.doi.org/10.1016/j.ijnurstu.2014.05.011

Bigham, B. L., Jensen, J. L., Tavares, W., Drennan, I. R., Saleem, H., Dainty, K. N., & Munro, G. (2014). Paramedic self-reported exposure to violence in the Emergency Medical Services (EMS) workplace: A mixed-methods cross-sectional survey. *Prehospital Emergency Care, 18*(4), 489-494. http://dx.doi.org/10.3109/10903127.2014.912703

Bigham, B. L., Jensen, J. L., Saleem, H., Tavares, W., & Munro, G. (2013). MOST paramedics are victims of violence in the prehospital workplace. *Canadian Journal of Emergency Medicine, 14*(1).

Blando, J. D., McGreevy, K., O'Hagan, E., Worthington, K., Valiante, D., Nocera, M., & Peek-Asa, C. (2012). Emergency department security programs, community crime, and employee assaults. *The Journal of Emergency Medicine, 42*(3), 329-338. http://dx.doi.org/10.1016/j.jemermed.2008.06.026

Bradley. (2012). *A qualitative study of violence and victimization perpetrated against registered nurses in the workplace*. (Doctoral), CAPELLA UNIVERSITY.

Brough. (2005). Workplace violence experienced by paramedics: Relationships with social support, job satisfaction, and psychological strain. *The Australasian Journal of Disaster and Trauma Studies, 2*, 13.

Carlson, G. P. (2007). *Hostile Workplace: Violence Directed Toward Rural Emergency Medical Services (EMS) Personnel*. (Master of Science), University of Wisconsin, University of Wisconsin.

Carroll-Garrison, M. M. (2012). *An exploration of managers' awareness and reaction to workplace incivility: A grounded theory study*. University of Phoenix.

Cresswell. (2012). *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research* (4th ed.). Boston: Pearson Education, Inc.

DeKeseredy, P. (2006). *Advancing critical criminology: Theory and application*. Lexington Books.

Duchateau, B.-L., Chollet, R.-H. M. (2002). Exposure of French EMS providers to violence. *Réanimation, 21*.

EMS., T. (2012). *History of 115 emergencies in Iran*.

Esmaeilpour, M., Salsali, M., & Ahmadi, F. (2011). Workplace violence against Iranian nurses working in emergency departments. *International Nursing Review, 58*(1), 130-137. http://dx.doi.org/10.1111/j.1466-7657.2010.00834.x

Florence. (2009). *Developing a grounded theory for successful workplace violence prevention programs*. Capella University.

Franz, S., Zeh, A., Schablon, A., Kuhnert, S., & Nienhaus, A. (2010). Aggression and violence against health care workers in Germany-a cross sectional retrospective survey. *BMC Health Services Research, 10*(1), 51. http://dx.doi.org/10.1186/1472-6963-10-51

Furin, M., Eliseo, L. J., Langlois, B., Fernandez, W. G., Mitchell, P., & Dyer, K. S. (2015). Self-Reported

Provider Safety in an Urban EMS. *West Journal Emergency Medicine, 16*(3), 6. http://dx.doi.org/10.5811/westjem.2015.2.24 124

Gaffney, D. A., DeMarco, R. F., Hofmeyer, A., Vessey, J. A., & Budin, W. C. (2012). Making things right: Nurses' experiences with workplace bullying-A grounded theory. *Nursing research and practice, 10*. http://dx.doi.org/10.1155/2012/ 243210

Gates, D. M., Gillespie, G. L., & Succop, P. (2011). Violence against nurses and its impact on stress and productivity. *Nurs Econ, 29*(2), 59-66.

Grange, J. T., & Corbett, S. W. (2002). Violence against emergency medical services personnel. *Prehospital Emergency Care, 6*(2).

Haghparast, H., & Khankeh, K.-Z. (2010). Barriers and facilitators to provide effective pre-hospital trauma care for road traffic injury victims in Iran: A grounded theory approach. *BMC Emergency Medicine, 10*(1), 20. http://dx.doi.org/10.1186/1471-227X-10-20

Hahn, M., Hantikainen, K., & Dassen, H. (2013). Risk factors associated with patient and visitor violence in general hospitals: Results of a multiple regression analysis. *International Journal of Nursing Studies, 50*(3), 374-385. http://dx.doi.org/10.1016/j.ijnurstu.2012.09.018

Hallberg, L. R., & Strandmark, M. K. (2006). Health consequences of workplace bullying: Experiences from the perspective of employees in the public service sector. *International Journal of Qualitative Studies on Health and Well-being, 1*(2), 109-119. http://dx.doi.org/10.1080/17482620600555664

Hancock, O. W. (2009). *An introduction to qualitative research*. Midland: The NIHR Research Design Service.

Iran., L. G. O. (2007). *Law "coverage of the pre-hospital emergency medical service"*. Tehran: Goverment of Iran.

Kazemneghad, P. V. (2015). Quality Survey of Pre-hospital Emergency Services in Guilan Province. *Journal of Guilan University of Medical Sciences, 3*(23-Supplement 1), 50-58.

Koritsas, S., Coles, J., & Boyle, M. (2010). Workplace violence towards social workers: The Australian experience. *British Journal of Social Work, 40*(1), 257-271. http://dx.doi.org/10.1093/bjsw/bcn134

Maftei, C.-V. (2010). The Sanctions Of The Islamic Criminal Law. Aspects Regarding Penalties of the Criminal Law of the Islamic Republic Of Iran. Religion and Tradition vs. Observing Human Rights. *Curentul Juridic, The Juridical Current, Le Courant Juridique, 3*, 139-148.

Mechem, D., & Shofer, J. (2002). Injuries from assaults on paramedics and firefighters in an urban emergency medical services system. *Prehospital Emergency Care, 6*(4), 6.

Petzäll, K., Tällberg, J., Lundin, T., & Suserud, B.-O. (2011). Threats and violence in the Swedish pre-hospital emergency care. *International Emergency Nursing, 19*(1), 5-11. http://dx.doi.org/10.1016/j.ienj.2010.01.004

Piquero, N. L., Piquero, A. R., Craig, J. M., & Clipper, S. J. (2013). Assessing research on workplace violence, 2000-2012. *Aggression and Violent Behavior, 18*(3), 383-394. http://dx.doi.org/10.1016/j.avb.2013.03.001

Pourshaikhian, M., Gorji, H. A., Aryankhesal, A., Khorasani-Zavareh, D., & Barati, A. (2016). *A systematic literature review of workplace violence in pre-hospital setting*. Arch trauma, (In press). Kashan, Iran. http://dx.doi.org/10.5812/atr.28734

Pourshaikhian, M., Moghadamnia, M., & Nasirzadeh, F. (2008). Duration of chest pain to hospitalization in cardiac center in acute myocardial infarctionc cases, Rasht. 2005. *Scientific Journal of Forensic Medicine, 13*(4), 228-234.

Rahmani, H., & Mills, D. (2012). Exposure of Iranian emergency medical technicians to workplace violence: A cross-sectional analysis. *Emergency Medicine Australasia, 24*(1), 105-110. http://dx.doi.org/10.1111/j.1742-6723.2011.01494.x

Saberinia, V. M. (2013). *Report of experience and performance of EMS personnel in 2011*. Paper presented at the the first conferance of optimal experiences and performances of primary health care system, Iran, North Khorasan, Bojnod.

Salarifar. (2010). *Domestic violence against women; Survey, Etiology and Treatment* (1st ed.). Tehran: Hajar publication.

Shahzad, M. (2014). Workplace Violence: An Extensive Issue for Nurses in Pakistan: A Qualitative Investigation. *Journal of Interpersonal Violence*. http://dx.doi.org/10.1177/0886260513516005

Sheikh-Bardsiri, H. (2012). The Frequency of Violence in Workplace against Emergency Care Personnel in Kerman, Iran, and the Factors Affecting the Occurrence. *Journal of Management and Medical Information School.*

Steffgen, G. (2008). Physical violence at the workplace: Consequences on health and measures of prevention. *Revue Européenne de Psychologie Appliquée/European Review of Applied Psychology, 58*(4), 285-295. http://dx.doi.org/10.1016/j.erap.2008.09.011

Suserud, B. O., Blomquist, M., & Johansson, I. (2002). Experiences of threats and violence in Swedish ambulance service. *Prehospital and Disaster Medicine, 17*(S2), S84-S85. http://dx.doi.org/10.1017/S1049023X00011171

WHO, & Di Martino, V. (2003). *Joint programme on workplace violence in the health sector.* ILO/ICN/WHO/PSI. Retrieved from http://www.who.int/violence_injury_prevention/violence/interpersonal/en/WV questionnaire.pdf

Xueling, L. (2013). Treatment-seeking delays in patients with acute myocardial infarction and use of the emergency medical service. *Journal of International Medical Research, 41*(1), 231-238. http://dx.doi.org/10.1177/0300060512474567

Copyrights