The relationship between anger with general health in emergency personnel

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Abstract

Context: The emergency staff work in stressful environments and deal with critically ill patients. The occupational nature of their work is such that they are always at risk of being exposed to work violence by patients or patient companions.

Aim: The aim of this study was to determine the relationship between anger with general health in emergency personnel.

Setting and Design: This was a correlational study that was done in prehospital emergency services and hospital emergency departments in Golestan province, in Iran in 2019.

Materials and Methods: The study conducted on 400 of emergency personnel. Samples were selected through multistage sampling. The sampling design included stratified sampling, cluster sampling, and convenience sampling in the first, second, and third stage, respectively. Data were collected using demographic, Spielberger's anger, and general health questionnaires.

Statistical Analysis Used: Description of sample under study presented using mean, standard deviation, and frequency. Assessment of associations was performed using Mann– Whitney and correlational analysis at significance level of 0.05.

Results: The mean total score of anger of emergency personnel was 121.94 ± 14.66 and for the prehospital and hospital emergency personnel were 123.53 ± 14.08 and 119.38 ± 15.26, respectively ($P = 0.002$). The mean total score of general health was 12.40 ± 4.22 and for prehospital emergency and emergency personnel were 12.23 ± 4.18 and 12.67 ± 4.29, respectively ($P = 0.75$). There was a positive and significant correlation between all three dimensions of general health and all three dimensions of anger so that with increasing anger, general health decreased.

Conclusion: Emergency personnel were in good general health while their anger score was above average. Furthermore, there was a significant inverse correlation between anger and mental health, so that by increasing the dimensions of anger expression, the general health of prehospital and hospital emergency staff was reduced.

Keywords: Anger, Emergency, General health, Nurse, Prehospital emergency

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INTRODUCTION

Occupational problems and difficult working conditions are one of the underlying factors of mental disorders.[1] Medical emergency personnel are exposed to stressful environments such as places full of injuries and critically ill patients that are very difficult to work.[2] The phenomenon of health, which has physical, mental, and social dimensions, is a necessary condition for playing individual and social roles, and all human beings can be fully active if they feel healthy and society considers them healthy. Occupations such as emergency nursing can lead to physical and mental health problems due to violence, abuse, and critically ill patients.[3] Emergency personnel should also be involved in transporting critically ill patients to medical facilities that affect their mood and emotions.[4] Aggressive interactions between patients (or their companions) and medical staff are widespread in emergency departments.[5] Aggression occurs in the emergency department on a daily basis, disrupts workflow, and puts employees at risk.[6] According to the Australian College of Emergency Medicine, despite the high prevalence of violence and aggression in the emergency department, these events are less reported.[7] Given that all medical personnel are exposed to workplace violence, but emergency medical personnel are more exposed to occupational violence than other treatment groups due to the nature of their occupation.[8] Prehospital emergency personnel in unfamiliar situations and places should help people and make the best decision in the shortest time, so the nature of the job of emergency personnel is considered stressful.[9] and it seems that these factors cause anger in emergency personnel.

The state anger as an emotional state is the intensity of anger at a certain time, and the trait anger means how often angry feelings are experienced over time while anger expression and anger control indicate in the expression of angry feelings toward people and objects. People may suppress their angry feelings and prevent of showing it obviously.[10] The evidence indicate that hospital staffs are more stressed than people who work in more public settings. Nurses who are at the forefront and provide caring services have the highest levels of tension. Constant and repetitive tension can cause anger. Anger is natural and sometimes unwanted or irrational emotion that staff may experience in a certain situation to protecting themself from what they perceive as not good. If the tension level is too high, and the intensity, frequency, or duration of anger is not properly controlled, it can have negative adverse on physical health and lead to depression, poor quality of life, and other emotional problems. The experience of anger is felt as physiological and emotional reactions and

how to deal with anger is the expression way of that.[11] Work-related stress in combination with psychological problems, moral problems, and patients' demands can put burden on mental health. Stress in the workplace can lead to lower quality of care, reduced job satisfaction, and quality of life. Constant interaction with patients and their families also can reinforce emotions ranging from anger to depression.[12] Stressful events can have a profound effect on the mental health of physicians and nurses in the emergency department. They witness aggression, violence, or the death of patients or participate in resuscitation, and it is mentally and physically exhausting. Although such incidents recur, their stress on emergency personnel is not reduced, and personnel are usually not prepared to deal with them and cannot adapt well to them.[13] One reason for examining anger is its association with different aspects of mental health, physical health, and quality of life.[14] On the other hand, due to working conditions, anger is more likely to occur in emergency personnel, but according to the researcher information, this issue has not been investigated in them. This study was conducted to determine the relationship between anger with general health in emergency personnel.

MATERIALS AND METHODS

Study design and participants
The present research is a correlational study that was conducted on 2019. The research settings were the Emergency Medical Management and Accident Center and Emergency Departments of Educational and Medical Centers of Golestan University of Medical Sciences. The research sample was prehospital emergency and hospital emergency personnel.

Sample size
Sample size is determined according to the method used in structural equation modeling (SEM) studies. In SEM literature, 5 to 10 samples recommended for each variable.[15] In the present study, we considered 7 samples per items of anger questionnaire (57 items), and therefore, 400 samples were determined.

Sampling
The sample recruited with multistage sampling. In the first stage, hospital and prehospital emergency centers considered as two categories, and using the proportional allocation, two-thirds of the samples ($n = 267$) selected from prehospital emergency centers and the one-third ($n = 133$) selected from hospitals. For selecting samples from hospitals, hospitals were considered as cluster and 5 hospitals randomly selected from the list of 14 hospitals.

In the next stage, from each hospital, samples were selected using convenience sampling. For selecting samples from prehospital emergency centers, each city considered as a cluster, and 4 cities randomly selected from the list of 14 cites. In the next stage, from each city, samples were selected using convenience sampling.

Inclusion criteria were including a degree in nursing/anesthesia/emergency medicine with at least 3 months of work experience. The exclusion criterion was incomplete answering to the questionnaire for 10% of the questions.

Data collection tools
a. Demographic and occupational information was assessed by questions about gender, age, marital status, employment status, work experience, and place of work
b. The 12-item Goldberg General Health Questionnaire (GHQ). The six of questions are positive items and six are negative items and measure psychological stress and social dysfunction.[16] The GHQ is scored in the form of a Likert from zero to three. The maximum score of the subject with this scoring method is 36. The cutoff point of GHQ is 15, and a score of 0 to 15 means high mental health and a score of 16 to 36 means low mental health.[10] This questionnaire has high reliability and the calculated Cronbach's alpha value for all its items is 0.90.[2] The GHQ has been standardized in different countries and also in different populations in Iran.[17-19] The studies confirmed that the Iranian version of GHQ-12 has a good factor structure and is a reliable and valid instrument to measure psychological distress and social dysfunction[16,20]
c. Anger (the STAXI-2) questionnaire consists of three sections (state, trait, and expression) and 57 items with four-point Likert answer. "State of anger" has 15 items in three subscales; feeling anger, tendency to express anger verbally, and physically. "Anger trait" has 10 items and consists of two subscales (angry mood and angry reaction) and measures individual differences in the tendency to experience anger over time. "Outward Anger Expression" has 8 items and measures the frequency of feelings of anger that are directed verbally or aggressively at other people or objects in the environment. "Inward Anger" measures the feeling of anger that is experienced but not expressed (suppressed) with 8 frequent expressions. "Outward anger control" and "inward anger control" each has 8-item measure the frequency with which a person tries to control their anger by calming down or cooling down. In this tool, the anger expression index is also calculated; this index is based on the individual's

response to the expressions of anger to the outside and inside and control of anger to the outside and inside.[21] An Iranian study indicated the acceptable validity and reliability of the STAXI-2 questionnaire. On all scales and subscales of the instrument except the subscale of angry reaction in men and the scale of outward anger have a similarity coefficient ≥0.7.[22]

Data collection method
After the legal process of starting the research, the researcher referred to the emergency departments of hospitals and medical emergency and accident centers. Then, he distributed the questionnaires among the qualified people and collected the questionnaires in the same shift or in the next shift.

Data analysis method
First, to provide a description of the status of the study sample, main indicators such as mean, frequency, and standard deviation were used. Comparison of anger and general health dimensions between hospital and hospital emergency personnel was compared with Mann–Whitney test. Using correlational analysis, the relationship between the components of anger (state anger, trait anger, and anger expression) and general health was assessed. Data analysis was performed using SPSS 21 (version 21 SPSS Inc., Chicago, IL, USA) at a significance level of 0.05.

Ethical considerations
All the principles of ethics in research, including obtaining informed consent, maintaining confidentiality, and the right to leave the study were observed. This study was approved by the University Committee on Research Ethics with the code IR.GOUMS.res. 98.230.

RESULTS

The demographic and job characteristics of emergency staffs are shown in Table 1.

Table 2 shows that it was very close to the significant level between the mean of anger trait, anger state, and total anger score in prehospital and hospital emergency personnel. The anger scores of prehospital staff were higher than hospital emergency staff in three dimensions. However, there was no significant difference between the mean of total general health and its dimensions of prehospital emergency and hospital emergency personnel.

The correlations were examined between each of anger domains with general health domains. Table 3 shows that there is a weak correlation between the dimensions of "anger expression" and "mental health." The correlations between anger (total) and mental health dimensions were

stronger than correlations between "anger expression" and mental health, but the correlations are relatively weak. The correlations between the dimensions of "anger state" and mental health are stronger than the correlations between "anger expression" and mental health and between "anger trait" and mental health.

DISCUSSION

The aim of this study was to determine the relationship between anger with general health in prehospital and hospital emergency personnel. The results showed a total good general health of prehospital and hospital emergency personnel without any significant difference between the two groups of employees. In a study in Québec (Canada), the emergency nurses had low levels of empathy and high level of psychological distress, low level of well-being, and poor mental health.[23] The mentioned study was a pilot one and only 40 Canadian volunteer nurses participated, so the poor mental health could be due to the selection bias. The cultural differences between countries can also affect the results of studies. Most people, including medical staff, refuse to accept and express their mental health problems. Few people admit that they are not mentally healthy and need counseling and treatment.

In a study in Iran (Qom), the prehospital staff had a good level of mental health and increase in mental health was associated with a decrease in burnout.[24] It seems that the young age of the study group (mean age 30 years) and relatively little work experience (with an average of 7 years) did not have an effect on the mental health of emergency personnel and its consistency with the findings of the present study that reported good general health can also be due to the young staff and their work experience.

The findings of the present study showed that the "overall anger score" of emergency personnel was higher than the average and the prehospital emergency anger score was higher than the hospital emergency personnel. Although both groups experience a stressful job, it appears that prehospital emergency personnel experience more stress because they face critically ill patients on the front line, most of their missions are on the road, and also because all of these personnel are male, the higher amount of anger is justifiable.

A study on health-care workers in prehospital emergency care services located in the Madrid region showed that the physicians, nurses, and emergency care assistants who exposed to verbal and physical violence experienced a high percentage of anxiety, burnout, and personality disorder.[25]

A systematic review on studies related to aggression and violent behavior against health-care professionals showed that emergency and psychiatric personnel experienced high levels of violence, leading to detrimental consequences such as anxiety, anger, depression, and negative outcomes on well-being and quality of life.[26]

The findings of the present study showed that the correlation between "trait of anger" and "state of anger" was positive.

Table 1: Demographic and job characteristics of the emergency staff of Golestan province in 2019

Variable	n (%)
Sex	
Male	245 (61.2)
Female	155 (38.8)
Age	
20-25	62 (15.5)
26-35	188 (47)
36-45	115 (28.8)
46-60	35 (8.8)
Job	
Nurse	234 (58.4)
Medical emergencies	135 (33.8)
Anesthesiology	31 (7.8)
Workplace	
Prehospital emergency	247 (61.8)
Hospital emergency	153 (38.2)
Work experience (years), mean±SD	
Prehospital emergency	9.25±6.94
Hospital emergency	9.30±6.02

SD: Standard deviation

Table 2: Mean and standard deviation of general health level and anger and their dimensions in emergency personnel of Golestan province in 2019

Variable	Mean±SD			P
	Prehospital emergency	Hospital emergency	Total	
Anger				
Expression of anger	81.22±9.62	79.52±9.08	80.62±9.44	0.1
Trait of anger	20.42±5.25	19.59±6.11	20.11±5.6	0.065
State of anger	21.77±6.86	20.29±7.25	21.21±7.04	0.004
Total anger	123.53±14.08	119.38±15.26	121.94±14.66	0.002
General health				
Anxiety	7.12±2.66	7.40±2.59	7.23±2.63	0.55
Social disorder function	6.10±2.35	6.35±2.44	6.19±2.63	0.9
Total general health	12.23±4.18	12.67±4.29	12.40±4.22	0.75

SD: Standard deviation

Table 3: Relationship between anger dimensions and general health dimensions in emergency personnel in Golestan Province in 2019

Variable	General health					
	General health		Social dysfunction		Anxiety	
	P	The correlation coefficient	P	The correlation coefficient	P	The correlation coefficient
Expression of anger						
Inward control	0.002	−0.153	0.005	−0.142	0.003	−0.148
Outward control	0.007	−0.134	0.019	−0.117	0.008	0.132
Expression of anger to inside	0.015	−0.122	0.063	−0.093	0.013	−0.125
Expression of anger to outside	0.021	−0.115	0.066	−0.092	0.019	−0.117
Trait of anger						
Angry temperament	<0.001	0.279	<0.001	0.219	<0.001	0.225
Angry reaction	<0.001	0.279	<0.001	0.242	<0.001	0.262
State of anger						
Feeling of anger	<0.001	0.354	<0.001	0.347	<0.001	0.360
Verbal desire	<0.001	0.378	<0.001	0.387	<0.001	0.389
Physical appearance	<0.001	0.381	<0.001	0.375	<0.001	0.374

In a study on nurses working in general hospitals in Seoul (Korea), there were significant differences among three anger expression types (low-anger expression, anger-in, and anger-in/control) and interpersonal problems ($P < 0.001$). In addition, the anger-in/control type was found to have the most difficulty with interpersonal problems.[11]

In the current study, the correlation between "state of anger" and "trait of anger" was positive. When the researchers asked from 118 adults to choose between a threatening and a normal situation, those with higher "anger traits" were more likely to choose stressful and threatening situations.[27]

The chronic expression of anger has a positive relationship with mental disorder and this positive relationship cannot be attributed to a negative feeling or "anger trait" alone. Expressing anger can also be a sign of a significant mental disorder.[28]

Overall, the results of the present study and the available evidence are in favor of improving public health by better anger management. Implementing interventions to learn anger management skills positively are likely to improve the mental health of emergency staff in the long run.[29,30]

In the present study, there were significant inverse correlations between all four dimensions of anger expression (control inside and outside and expression of anger inward and outward) with both dimensions of anger trait (anger mood, anger response). A behavioral laboratory study showed that the more people who were exposed to anger stimuli suppressed their anger expression, the less anger they developed.[31]

The findings should be interpreted in regard to the study limitations. First, data were collected using self-report measures, and not actual behavior is almost impossible although the questionnaires were well validated in the Iranian population. Second, general health is also affected by various variables, all of which cannot be controlled in a human and cross-sectional study, while efforts made to control the variables as much as possible and include them in statistical analysis.

CONCLUSION

In general, there is a link between general health and anger in emergency personnel. Since the emergency staff had a higher score in average in anger, then it is necessary to learn skills to control their anger, especially expression of anger. Furthermore, since prehospital emergency personnel had better general health, it is necessary to think about measures to improve the general health of both groups of personnel, especially hospital emergency personnel.

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