



## Stress, Meta-cognitive Beliefs and Psychopathology with Perceived Self-efficacy in Medical Emergency Staff

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### A B S T R A C T

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The purpose of this study was to investigate the relationship between stress, meta-cognitive beliefs and psychopathology with perceived self-efficacy in the emergency medical staff of Bushehr province. The method of this research is descriptive correlational. The statistical population of this study is all medical personnel of Bushehr province in 2016, numbering about 160 people. The sample of this research consists of 141 people from the mentioned society. A simple random sampling method was used using Morgan's table. The tools used in this study were Perceptual Stress Questionnaire, Metacognitions Questionnaire (MCQ-30), SCL-90-R and self-efficacy scale (1982). The results showed that there is a negative and significant relationship between stress and perceived effectiveness in emergency medical personnel. There is a significant positive correlation between metacognitive beliefs and perceived self-efficacy in emergency medical personnel. There is a negative and significant relationship between psychopathology and perceived self-efficacy in emergency medical personnel. The metacognitive beliefs, psychopathology and stress are predictive of perceived self-efficacy in emergency medical staff, respectively.

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**Keywords:** Stress, Meta-cognitive beliefs, psychopathology, Perceived Self-efficacy, Staff.

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### INTRODUCTION

One of the main human problems that, according to scientists, are the product of social change, is stress. The satisfaction and contentment of individuals from their occupation will not only increase the success of the job, but also have a positive impact on the general way of life (Nelson & Simmons, 2003). The importance of results and outcomes of occupational stress in relation to the job of emergency medical staff is higher than other occupations (Adriaenssens, De Gucht, & Maes, 2015). Stress is always one of the most important causes of the formation of various diseases of the body and the death of individuals. People under stress experience preoccupation and often have intrusive feelings and thoughts (Sarason & Sarason, 1982; Sarason, Sarason, & Pierce, 1990).

Individual with such preoccupation may reduce his optimal level of performance and increase the likelihood of vulnerability and behavioral and emotional disturbances (Meyer, 2013; Schauer, Schauer, Neuner, & Elbert, 2011; Swan & Hamilton, 2017). Stress, of course, is beneficial to humans, because it makes learning more stable and enhances memory and

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improves performance. In fact, positive stress provides the necessary stimulus for prioritizing and delaying activities or timely completion of tasks as long as a person has control (Oken, Chamine, & Wakeland, 2015; Salas & Martin, 2017). The most important point in Stress Management is that it is necessary to pay attention to the lack of exposure to stressors and to address it, the power of coping with stress is taken into consideration. Although the goal is not to avoid stressful situations, the goal is to deal with these stressors (Sherman, Edwards, Simonton, & Mehta, 2006).

Stress is one of the major problems of human society and many people are struggling with it. Stress appears to be an essential part of the inevitable result of human interaction with the environment (Cherniss, 2016; Srinivasan, Maruthy, Venugopal, & Ramaswamy, 2016). Stress involves physical, mental and emotional reactions that are experienced as a result of the changes and needs of a person's life. Changes can be large or small (Levi, 2016; Seaward, 2017). People respond differently to changes in life. Positive stress can be a motivator, while negative stress can be created when these changes and needs defeat the individual. Perceived stress is a psychological state or process in which a person perceives his physical and psychological well-being as threatening. In other words, perceived stress is the perceived person's abilities and assurance in the face of environmental demands (Lovallo, 2015; Seaward, 2017; Stokes & Kite, 2017).

Mental illness has existed since the onset of mankind, and no human is immune to these diseases, and this danger always threatens humanity (Gostin & Wiley, 2016; Pilgrim, 2017; Sorsby, 2017). Misunderstandings, incompatibilities and behavioral disorders in human societies are very evident in the family, school, office, workshop, factory, university, group, and community, and in all people, women and children, kids and teenagers, young adults, employees, unemployed, worker, professor, student, doctor, engineer ... There is a risk of mental illness, and the same extent justifies the need to examine how to deal with mental illness (Melton et al., 2017).

The mental health of each person depends on the ability and power of the enhancement, and as much as possible, the health of the emotional life is also higher. A person has mental health, whose talents are appropriate and consistent in their development, and he meets their needs in a manner and manner that is acceptable to himself and to other people who are in the same environment (Halter, 2017; Newman & Newman, 2017; Shea, 2016). In addition to genetic factors, mental health will also have an impact on environmental factors. However, it is very difficult to fully understand the mental health features of a person, but when people are healthy in terms of their mental characteristics, they can be characterized (Golightley & Goemans, 2017; Meyer, 2013; Sorsby, 2017).

Self-efficacy is the amount of belief in your ability to succeed in a particular situation or the level of self-confidence that a person has in relation to his abilities (Alessandri, Borgogni, Schaufeli, Caprara, & Consiglio, 2015; Wang & Neihart, 2015). Self-efficacy is a subjective and perceptual process that does not deal with individual skills, but takes into account individual judgments about what it can do with its skills. The concept of self-efficacy or personal self-efficacy induced by American psychologist Albert Bandura refers to the individual's expectations and evaluations of success in a job, or the achievement of a goal or result that is

valuable through individual activity(Chan et al., 2017; Mauer, Neergaard, & Linstad, 2017; Schwarzer, 2014).

The phenomenon of stress or nervous pressure is one of the most acute problems in today's institutions that endangers the physical and mental health of the workforce and has put heavy costs on organizations(Einstein, 2014; McCormack, 2014). According to a group of experts, stress due to organizational behavior is a career-induced common illness and it is true that the age of stress is in which the human being is more exposed to stressors at any other time and has surrounded him with many problems from everywhere(Herbert & Cohen, 1993; Hockey, 1997; Toussaint, Shields, Dorn, & Slavich, 2016). Employees spend hours working in the workplace. Occupational dissatisfaction and stress, within a few years, make person the sick. Hence, experts recommend to managers to consider stress in the workplace. They can identify and educate people to coping with stress. They can also eliminate stressors from the workplace in a preventive way. Do we prefer happy, healthy and satisfied employees or employees who are stressed and suffering from heart disease and hypertension? According to mentioned material, the managers and employees in different organizations can take practical steps to increase their individual and organizational strength and tolerance to coping with stress(Darmody & Smyth, 2016; Gulavani & Shinde, 2014; Jahromi, Minaei, Abdollahifard, & Maddahfar, 2016; Koreki et al., 2015).

Metacognition, on the other hand, refers to internal cognitive factors that control, monitor, and evaluate thought. Metacognition can be divided into three components include metacognitive knowledge (for example, "to be concerned about issues to be tackled"), experiences (for example, feeling), and strategies (for example, ways of controlling thoughts and protecting beliefs)(Corno, 1986; Garofalo & Lester Jr, 1985; Wells, 2002). The main concept is that metacognitive factors play a crucial role in determining the maladaptive thinking styles observed in psychological disorders that lead to the persistence of negative emotions. Hard-metacognitive theory suggests that illogical beliefs or schemes emphasized by Ellis (1979) (Harrington, 2006). Back in their own cognitive theories, or at least their continuity and influence, are cognitive products. Metacognition guides attention, defines the style of thought, and leads coping responses in a way that leads to inefficient knowledge. This approach is a dynamic view of beliefs as a product of more enduring meta-cognition. This view implicitly states that metacognition, and not its implications, should be changed in the treatment(Wells, 2002). The soft metacognitive theory states that metacognitive beliefs exist along with other stored beliefs about themselves and the world, but separate entities that are responsible for controlling the recognition and application of other general beliefs and knowledge(Carruthers, 2009; Couchman, Coutinho, Beran, & Smith, 2009; Friedman & Petrashek, 2009). In this meta-cognitive theory, therapy preserves the component of the challenge with the old beliefs, but also confronts meta-cognitive conflicts. Two hard and soft metacognitive approaches have important implications for treatment(Bose, 2014; Kennerley, Kirk, & Westbrook, 2016; Wells, 2013).

Therefore, identifying the components of meta-cognitive beliefs and communication skills, effective cognitive interventions such as coping strategies should be investigated and thus, by creating the background preventive measures to prevent excessive material and spiritual costs. Also, the results of this study can be used to plan for prevention of learning disabilities, psychological, educational and economical interventions and to adopt appropriate

interventions for coping with these disorders. Given the fact that families tend to be less inclined to treatment costs, the equipping of people with coping strategies and meta-cognitive beliefs, which is a cognitive process, is of particular importance. On the other hand, according to Albert Ellis's claim that the universality of meta-cognitive beliefs and its effect on success in researcher persons is interested in this study, this study can investigate the relationship between stress, meta-cognitive beliefs and psychopathology with perceived self-efficacy in medical emergency staff of Bushehr province.

## METHODOLOGY

The present research is descriptive and is a correlational type in terms of implementation. The statistical population of this study is all medical emergency personnel of Bushehr province in 2016, numbering about 160 people. The sample of this study consists of 141 people who were selected using simple random sampling method using Morgan table. In this study, four standard questionnaires were used:

1) Perceived Stress Questionnaire: The Stress Scale is used to determine the extent to which one's individual life situations are stressful. These questions are designed to help respondents express their opinion about the uncontrollable, unpredictable and harsh nature of their lives. This scale is made for use in normal samples (non-acute mental illness). Easy-to-understand sentences are easy to recognize, and answer options are easy to understand. Additionally, replies are of a generic nature and hence are virtually nonexistent for any specific content that is specific to a particular subgroup. The questions of this scale are about emotions and thoughts that one person has had over the past. Questions 4-5-6-7-9-10-13 reverse the scoring (no = 5, somewhat = 3, very high = 1, very low = 4, relatively = 2), and their sum of scores are other questions. The minimum perceived stress score is 14 and the maximum is 70.

2) Metacognitions Questionnaire (MCQ-30): This scale is a 30-point scale developed by Wells and Cartwright-Hatton (2004) and designed to measure positive and negative beliefs of individuals about worries. Each subject answers these items as four options (I do not agree, I agree very much). The metacognitive questionnaire has five components: 1. Positive beliefs about worries. 2. Trust. 3. Cognitive self-awareness. 4. Negative beliefs about the uncontrollability of thoughts. 5. Beliefs about the need for control thoughts.

3) The SCL-90-R questionnaire is one of the most widely used diagnostic tools for psychiatry. The questionnaire consists of 90 questions for assessing psychological symptoms, which can be used to identify healthy people from patients. The questionnaire was introduced by Derogatis, Lipman, and Covi (1977) and reviewed on the basis of clinical experience in psychometric analyzes and finalized in 1976. Many studies have been carried out in Iran to standardize it. The responses presented to each test item are characterized by a 5-point scale of discomfort that is between (none) and (severely). This test covers 9 different aspects of physical complaints, obsession and compulsion, interpersonal susceptibility, depression, anxiety, aggression, phobic disorder, paranoid thoughts, and psychosis. The scoring and interpretation of the test are based on the three indicators of the total coefficient of withdrawal symptoms, the degree of discomfort, and the sum of the symptoms of the disease.

4) Perceived self-efficacy questionnaire: This questionnaire was developed by Maddux, Sherer, and Rogers (1982) and contains 17 items. The questionnaire measures the perceived self-efficacy (individual beliefs about its ability to overcome different situations). The questionnaire is based on a five-point Likert scale. In that way, the answer is quite opposite to score 1, and the answer is quite agree with score 5. High scores represent a high self-efficacy sensation in a person. Maddux et al. (1982) reported Cronbach alpha equal with 0.86 for this questionnaire. Also, their studies showed that there is a positive correlation between the scores of this questionnaire and the success of the job and education. In this research, Cronbach's alpha method was used to determine the reliability of the questionnaire. For the whole questionnaire it was 0.83, which indicates the acceptable reliability coefficients of self-efficacy questionnaire.

**RESULTS**

**Table 1.** The mean and standard deviation of study variables

Study Variables	Mean	SD	N
Stress	25.63	6.96	141
Metacognitive Beliefs	55.94	18.52	
Positive beliefs about worries	9.54	3.42	
Beliefs about the Uncontrollability	12.11	4.02	
Cognitive Confidence	13.74	4.16	
Need to Control Thoughts	11.43	3.78	
Cognitive Self-Consciousness	9.12	3.14	
Psychopathology	43.11	9.02	
Perceived self-efficacy	57.74	10.16	

**Table 2.** Multiple correlation coefficients of predictive variables (stress, meta-cognitive beliefs and psychopathology) with perceived self-efficacy in emergency medical staff by simultaneous and step-by-step regression

Method	Predictor Variables	R	R <sup>2</sup>	F	P	β	t	P
Enter	Stress	0.58	0.33	45.67	0.001	-0.27	-5.41	0.001
	Meta-cognitive beliefs					0.35	8.65	0.001
	Psychopathology					-0.31	6.34	0.001
Step – by Step	Meta-cognitive beliefs	0.52	0.27	36.45	0.001	0.52	8.25	0.001
	Psychopathology	0.54	0.29	41.55	0.001	-0.45	-6.85	0.001
						-0.41	-5.96	0.001
	Stress	0.58	0.33	45.67	0.001	0.33	4.11	0.001
						-0.29	-9.89	0.001
						-0.27	-3.11	0.001

According to table 2, the regression model of the perceived self-efficacy is significant by the variables of stress, meta-cognitive beliefs and psychopathology (P = 0.0001 and F = 45.67). The variable of metacognitive beliefs with beta coefficient of 0.35 can be positively and significantly and the psychopathology with beta coefficient of -0.31 and stress with beta

coefficient of -0.27 can negatively and significantly affect perceived self-efficacy. Also, the value of  $R^2$  shows that 58% of the variance of perceived self-efficacy in emergency medical staff is explained by the mentioned variables. The results of stepwise regression analysis have shown that metacognitive beliefs, psychopathology, and stress are predictors of perceived self-efficacy respectively.

Table 3. Correlation coefficients between metacognitive beliefs components and perceived self-efficacy in emergency medical staff

Criterion Variable	Predictor Variables	R	p	N
Perceived self-efficacy	Positive beliefs about worries	0.49**	0.001	141
	Beliefs about the Uncontrollability	0.42**	0.001	
	Cognitive Confidence	0.33**	0.001	
	Need to Control Thoughts	0.33**	0.001	
	Cognitive Self-Consciousness	0.39**	0.001	
	Psychopathology	-0.47**	0.001	
	Stress	-0.41**	0.001	

According to table 3, there is a significant positive correlation between metacognitive beliefs and perceived effectiveness in emergency medical personnel ( $r = 0.47$ ,  $p = 0.001$ ). In other words, as meta-cognitive beliefs are higher in emergency medical personnel, their perceived effectiveness will be even greater.

Also, there is a significant and positive relationship between metacognitive beliefs in the areas of positive beliefs about worries, beliefs of control, beliefs about cognitive confidence, general meta-cognitive beliefs in relation to the need for control, meta-cognitive beliefs in relation to cognitive self-consciousness and perceived self-efficacy of emergency medical personnel.

There is a negative and significant relationship between psychopathology and perceived self-efficacy in emergency medical personnel ( $p = 0.001$  and  $r = -0.47$ ). In other words, the more psychopathology of the emergency medical staff is, the less perceived self-efficacy will be.

There is a negative and significant relationship between perceived self-efficacy and stress among emergency medical personnel ( $p = 0.001$  and  $r = -0.41$ ). In other words, the stress of the emergency medical staff is less, the more perceived self-efficacy will be.

## CONCLUSION

The results showed that regression of perceived self-efficacy in emergency medical staff was significant on stress, meta-cognitive beliefs and psychopathology. The variable of metacognitive beliefs with beta coefficient of 0.35 can be positively and significantly and the psychopathology with beta coefficient of -0.31, and stress with beta coefficient of -0.27 can negatively and significantly affect perceived self-efficacy. Also, the value of  $R^2$  shows that 58% of the variance of perceived self-efficacy in emergency medical staff is explained by the

mentioned variables. The results of stepwise regression analysis have shown that metacognitive beliefs, psychopathology, and stress are predictive of perceived self-efficacy respectively.

In explaining the results of the first hypothesis, it can be said that self-efficacy play a fundamental role as a cognitive process in the abnormal psychology. High efficiency, personal health and ability to do homework are multiplied in a number of ways, those who are confident in their ability to consider problem assignments as challenges that must be mastered, rather than being. Threatening and avoiding them, they will choose challenging goals and commit themselves to fulfill it. They are confident that threatening situations can be controlled. Such an attitude reduces function, tension and depression and leads to the completion of assignments.

Self-efficacy is immersions and judges of individuals about their skills and abilities to do things that require special situations. Feeling self-efficacy enables individuals to do extraordinary work using skills to deal with obstacles, so self-efficacy is an important factor for successful performance and basic skills to do it.

Self-efficacy affects the amount of effort to perform a task. Individuals who believe in their efficiency are struggling to overcome obstacles and problems. The results showed that there is a negative and significant relationship between stress and perceived self-efficacy in emergency medical personnel. In other words, the stress of the emergency medical staff is less, the more perceived self-efficacy will be.

In explaining this result, this hypothesis can be said in medical emergency staff because of direct relationship with human health is one of the most important areas of sustainable development in human societies. Realizing this requires a healthy, happy, and motivated worker. In all organizations, we encounter employees who are regular, caring, and interested in entering the work of an employee, but usually feel tired after working hard and confronting a lot of workplace stress and problems in the workplace and even want to quit their work.

Nowadays, in organizations and in the workforce, due to direct relationship with human health, one of the most important areas of sustainable development in human societies is considered. Realizing this requires a healthy, happy, and motivated worker. One of the staff in this department is the emergency medical staff. In all organizations, we encounter employees who are regular, caring, and interested in entering the work of an employee, but usually feel tired after working hard and confronting a lot of workplace stress and problems in the workplace. And even want to quit their work. Among these, one of the most common causes can be job stress. Occupational stress, which refers to physical, emotional and mental state as a means of meaning, is a topic that has been considered by many scholars today.

This will have a widespread impact on the quality of service for users. So that employees gradually feel that they cannot cope with clients and that it becomes hard and difficult for them to work with clients and that they therefore find negative attitudes towards the users. This sometimes causes failure and decreases their self-esteem. In this regard, attention to mental health, i.e., emphasis on methods that transform the organization to increase the job satisfaction and productivity of employees, and as a result of their participation and their satisfaction from work, and reduce work-related stress that reduces stress. Due to work, stress and subsequent burnout are also reduced.

The results showed that there is a significant positive correlation between metacognitive beliefs and perceived self-efficacy in emergency medical personnel. In other words, as metacognitive beliefs are higher in emergency medical personnel, their perceived effectiveness will be even greater. Also, there is a positive relationship between metacognitive beliefs in the areas of positive beliefs about worries, beliefs of control, beliefs about adequacy, general metacognitive beliefs in relation to the need for control, meta-cognitive beliefs in relation to cognitive self-awareness and perceived self-efficacy of emergency medical personnel.

In explaining this result it can be said that individual beliefs or mental schemas are determined by the attitude of the person to himself, the world and the future. If these cognitive structures are rational and positive, one's tendency toward everything will be positive and hopeful, and if these cognitive structures are irrational, the attitude of the individual towards himself, the future, and the world around him will be negative, in such a way that the opposite facts are interpreted in such a way. Within the framework of pre-formed and directional issues, and this directional interpretation produces inaccurate information and distortions and cognitive errors. Thus, the staff will come up with a variety of needs and will constantly seek to resolve their problems. He has a strong desire for love, kindness, respect, growth, advancement and dreams and heavily avoids failure and neglect.

In general, he is born with much power for wanting insists that everything is best in his life. If these demands are not met quickly and completely, there may be two opposing perceptions based on their intrinsic desires of the incident. When employees are subjected to metacognitive beliefs and metaphors, they will achieve logical and constructive consequences, and will have a normal and reasonable character and behavior. Logical consequences will lead to appropriate adaptation of these individuals. But whenever employees are subjected to irrational thoughts, beliefs and opinions, they will experience unreasonable consequences. In this case, the person is experiencing emotional and behavioral disturbances. However, the behavior and emotions of the employees are based on his beliefs and beliefs, and the behavioral or emotional outcomes are largely independent of events and events.

That is, their emotional and behavioral responses are not precisely coordinated and appropriate to the incident and events, but rather to their perception and recognition of events. It can be said that the system of employee beliefs is a very important part of his personality that can affect the various dimensions of their personality.

Metacognitive beliefs relate to the knowledge and beliefs a person refers to his cognitive resources in one area, how well that works in that area, the exploratory strategies and methods that can be used, and the nature of that field of knowledge. In other words, knowledge Metacognition refers to the knowledge gained about cognitive processes - the knowledge that can be used to control cognitive processes.

The results showed that there is a negative and significant relationship between psychopathology and perceived self-efficacy in emergency medical personnel. In other words, the more psychopathology of the emergency medical staff is, the more perceived self-efficacy will be. In explaining these results, it can be said that according to Bandura, who believes that individuals are subject to physical states in their abilities (self-efficacy), which, in their turn, are

affected by the person's emotional and behavioral situations in general, and adaptability in all its dimensions. Negative emotions such as fear, anxiety, tension and depression cause people to underestimate their abilities in performing their tasks, which are in fact, the concept of self-efficacy. Low self-efficacy people feel in control of helpless life events and unable to they believe that every effort they make is futile. In the face of barriers, if early attempts to deal with the problems are in vain, they will soon stop hoping. Psychological states such as fatigue, anger and suffering in a person who have low self-efficacy symptoms lead to a lack of adjustment in the social environment of the individual.

Also, individuals with high self-efficacy also believe that they can effectively deal with events and conditions. Since these people are successful in coping with problems, they endure at homework and often act at a high level. These people are more confident in their abilities than those with low self-efficacy and have less doubt on themselves. They challenge challenges, not threats, and actively search for new situations. High self-efficacy reduces frustration of failure, raises the level of aspirations, and enhances the ability to solve and analyze analytic issues, and enhance individual adaptability.

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