

# Acute Stress Disorder Symptoms after a Myocardial Infarction: The Role of Resilience

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**Abstract:** The purpose of this study was to identify symptoms of acute stress disorder (ASD) in a cohort of patients with a myocardial infarction and to specify the relationship between resilience and ASD symptoms. During their hospitalization, participants completed the Impact of Event Scale-Revised (IES-R) and The Connor-Davidson Resilience Scale (CD-RISC). According to the results we found that the ¼ of MI patients developed ASD symptoms. There were no significant differentiations in Resilience levels to both patients with and without ASD symptomatology. Only the levels of Acceptance of changes were higher in those without ASD symptoms. Positive acceptance is a key component of resilience, hence, during stressful events like a MI, can lead the patient to recognize his limits and manage his state more effectively.

**Keywords:** Myocardial Infarction, Acute Stress Disorder, Resilience.

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## 1. INTRODUCTION

During last decades, psychological research has shown that exposure to severely stressful conditions, such as major disasters, combat operations, sexual assaults and other life-threatening events, can lead to psychological trauma (Yehuda, 1999). The concept of trauma has expanded considerably over the last decades, so that it can cover the intense human reactions in a variety of contexts. Its involvement in medical diagnoses and therapies is increasingly observed (Tedstone and Tarrier, 2003).

Myocardial infarction (MI) can be a stressful life-threatening event which is responsible for approximately 7.5 million deaths every year worldwide (Yusuf et al., 2001). A myocardial infarction involves considerable costs for the individual, family and society, with a strong impact on the patient functioning and quality of life. The unexpected and unpredictable occurrence of MI is a potentially traumatic incident, hence, may lead to psychological consequences. Its presence raises important psychological extensions such as anxiety disorders and mood disorders (Schweikert et al., 2009).

There has been even more consideration about the involution of mental health specialists in the cure of MI, through a multidisciplinary approach to prevention and treatment (Rozanski, Blumenthal, Davidson, Saab and Kubzansky, 2005). The focus on ASD symptoms on the early post-MI period, is essential and clinically important in terms of mental and physical health alike. Such symptoms showed associations with decreased general health and poor quality of life after MI (Doerfler, Paraskos, & Piniarski, 2005), and increased risk for future hospital readmissions due to cardiovascular causes (Shemesh et al., 2004). Additionally, several psychological factors, such as resilience, can play a reductive role in the vulnerability of a MI. Promoting resilience as a psychological feature, can be really important in various stressful situations, including MI (Agaibi and Wilson, 2005).

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The aim of the present study was to investigate the psychological impact and the role of resilience as a psychological feature, in a sample of patients with a MI.

**2. METHODOLOGY**

A cross-sectional design was employed. The sample comprised 80 participants of which 62 were men and 12 were women. The median age of the sample was 57,67 years (S.D. = 9.95) for the men and 55,33 years (S.D. = 10.38) for the women with a range from 37 to 75 years. All participants were in-patients in a Coronary Intensive Care Unit and were evaluated within 48 – 72 hours after the MI. Patients who met the following criteria were eligible for the study: age 18 years or older; fluency in Greek language; absence of any cognitive deficit and absence of any severe comorbid health and mental health problem (e.g.: cancer, AIDS, psychiatric diagnosis). The research protocol and the consent form were explained to eligible patients, and a consent form was read and signed by those who agreed to participate.

**3. MATERIALS**

The following measures were completed.

At first, a clinical patient history was recorded along with some sociodemographic variables included gender, age, marital status, living arrangement, education, working status, and smoking status. In the second part, the psychometric evaluation was carried out including the following measures:

*The Impact of the Event Scale-Revised (IES-R) (Weiss, 2007):* The IES-R is a self-administered, 22-item questionnaire based on three clusters of symptoms identified in the *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition (*DSM-IV*), as indicators of acute stress disorder. Those assessed with the IES-R are asked to indicate the degree of their distress for each of 22 symptoms according to a five-point scale: 0 indicates that the symptom occurs “not at all”; 1, “a little bit”; 2, “moderately”; 3, “quite a bit”; and 4, “extremely.”

*The Connor-Davidson Resilience Scale (CD-RISC) (Connor and Davidson, 2003):* The CD-RISC comprises of 25 items, each rated on a 5-point scale (0–4), with higher scores reflecting greater resilience. Total scores, which range from 0 to 100, and five subscales: (1) personal competence, (2) tolerance of negative affect and stress-related growth, (3) acceptance of changes, (4) personal control, and (5) spiritual orientation to the future.

**4. RESULT**

Descriptive statistics for baseline characteristics were used. A regularity audit of the quantitative variables was held, in order to check if they followed the normal distribution.

Of the 80 participants, 77.1% were married, 31.3% were high school graduates, 41.3% were in full-time jobs and 55% were smokers. In the past, 10% of the participants had visited a mental health specialist without receiving a specific psychiatric diagnosis.

Participants were divided into two groups based on their score in the Impact of Event Scale. The first group included those who scored positively for ASD symptoms and the second group was those in whom ASD symptomatology was absent. More specifically, of the total patients 22 participants had high scores (IES-R > 33), 15 men (68.2%) and 7 women (31.8%).

An unrelated control difference study was conducted for the averages of the variables. No differences were observed between the two groups in the study of the mean - difference in the "Resilience" variable ( $p > 0.005$ ). From the media case control study, we found that the subscale Acceptance of changes ( $M = 14.03$   $Sd = 3.03$ ) is significantly higher ( $p = 0.005$ ), for participants who did not meet the criteria for post traumatic anxiety disorder is significantly higher ( $t =$ ,  $Df = 78$ ,  $p = 0.005$ ), than them with ASD symptomatology ( $M = 11.77$   $Sd = 3.49$ ).

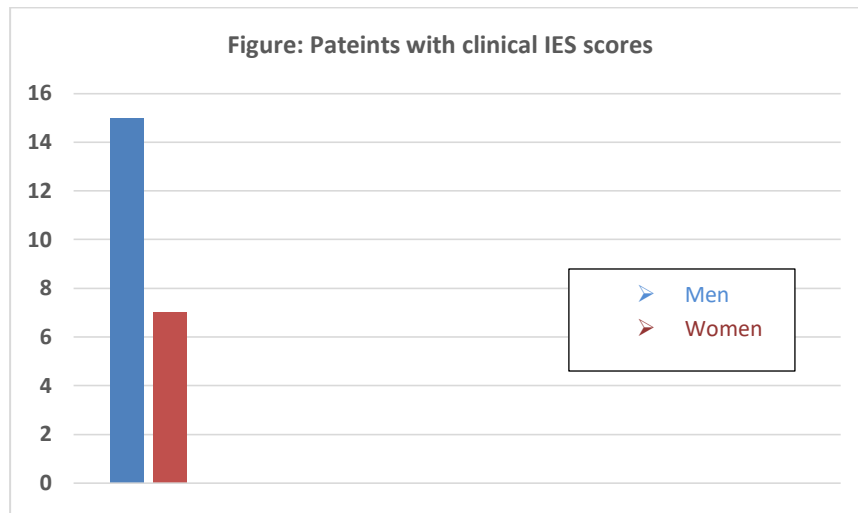


Table 1. Unrelated Control Difference «Resilience»

	IES	N	Mean	Standard Deviation	Typical Error
Personal competence	IES<33	58	22,59	4,653	,611
	IES>33	22	21,50	5,780	1,232
Tolerance of negative affect and stress-related growth	IES<33	58	17,86	3,855	,506
	IES>33	22	16,36	3,064	,653
Acceptance of changes	IES<33	58	14,03	3,032	,398
	IES>33	22	11,77	3,491	,744
Personal control	IES<33	58	7,88	2,161	,284
	IES>33	22	7,82	2,108	,449
Spiritual orientation to the future	IES<33	58	4,53	1,949	,256
	IES>33	22	5,09	1,849	,394
Resilience total	IES<33	58	66,90	11,187	1,469
	IES>33	22	62,55	11,815	2,519

Table 2. Unrelated Control Difference «Resilience»

	F	Sig	t	df	Sig	Lower	Upper
Personal competence	,870	,354	,871	78	,387	-1,397	3,569
			,790	31,884	,436	-1,716	3,888
Tolerance of negative affect and stress-related growth	1,543	,218	1,636	78	,106	-,325	3,322
			1,813	47,485	,076	-,163	3,160
Acceptance of changes	1,789	,185	2,857	78	,005	,686	3,838
			2,680	33,721	,011	,546	3,977
Personal control	,730	,396	,114	78	,910	-1,009	1,131
			,115	38,814	,909	-1,014	1,136
Spiritual orientation to the future	,438	,510	-1,156	78	,251	-1,515	,402
			-1,184	39,811	,243	-1,507	,394
Resilience total	,321	,572	1,530	78	,130	-1,311	10,014
			1,492	36,170	,144	-1,562	10,264

### 5. CONCLUSION

The particular psychological impact of the occurrence of a MI, is revealed as a significant part of the contemporary health interventions (Green and Kimerling, 2004). Symptoms of acute stress disorder after a MI are clinically important for both mental and physical health. In fact, they seem to have a negative impact on overall cardiovascular health.

The results revealed variations in the clinical expression of ASD symptomatology in patients who suffered a MI. From the initial sample, the ¼ expressed ASD symptoms within the clinical value limits, according to the classification of the Impact of Event Scale. Consequently, a significant number of the total sample experienced greater difficulties associated with the stressful event of a MI.

Additionally, the findings suggest that patients with lower rates of ASD symptomatology, express higher levels of positive acceptance of the event and total resilience. Positive concepts, such as resilience, seems to be related to physical and mental health and may improve recovery after a stressful event (Pressman and Cohen, 2005). The presence of positive emotions is considered to be a catalyst for the elimination of psychopathological problems (Brummett, Morey, Boyle and Mark, 2009). Positive acceptance is a key component of resilience, hence, during stressful events like a MI, can lead the patient to recognize his limits and manage his state more effectively (Vázquez, Hervás, Rahona και Gómez, 2009).

In conclusion, myocardial infarction can be a traumatic event which triggers psychological manifestations of clinical content. However, the presence of resilience and its features, can lead to better pathophysiological results.

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