



## Research Paper: The Relationship between Resilience and Depression in Patients with Cardiovascular Disease



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### Abstract

Long-term chronic diseases such as AIDS, cancer and heart diseases always create crises in people's lives by changing the way patients look at themselves. Coronary arteries of the heart, which cause hardening and narrowing of the arteries of the heart, are the most common type of heart disease. This descriptive correlational study investigated the relationship between depression and resilience in cardiovascular patients. The study population included all cardiovascular patients in East Gilan in 2018. Purposive sampling was used to select 150 patients who completed the Connor-Davidson Resilience Scale (CD-RIS) and Zong Depression Self-Rating Scale (SDS) questionnaires. Data were analyzed using correlation. The results showed that there is a significant negative correlation between depression and resilience in cardiovascular patients ( $P < 0.01$ ). This study emphasized the importance of improving resilience to reduce depression in this population. It can also be concluded that resilience plays a mediating and modulating role in heart disease and its low levels are considered as a risk factor for depression and heart disease.

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## 1. Introduction

Coronary arteries of the heart, which cause the narrowing and hardening of the heart's arteries, is the most common and deadly chronic disease. In Iran, this condition accounts for 46 percent of deaths and has a prevalence of 181.4 per 100,000 people (Comín-Colet et al., 2016). This condition has been called the epidemic of the century and has become widespread in Iran. It is estimated that 40 to 50 percent of men and 25 to 35 percent of women among the healthy 40-year-old population will eventually develop coronary heart disease (Hashemi et al., 2022).

Experts suggest that some psychological disorders may predispose or aggravate cardiac and vascular patients to this condition. Extensive research has been conducted on the factors that facilitate or hinder the health improvement of cardiac and vascular patients. The findings indicate that high motivation, appropriate living environment and high resilience are conducive to the health of cardiac and vascular patients, while stress, depression, anxiety and low motivation are detrimental to their health (Oshio et al., 2003).

Resilience is a crucial concept for the mental health of cardiac and vascular patients. It refers to the ability to cope with or adapt to challenging situations (DoustdarTousi & Golshani, 2014). Resilience entails the individuals' capacity to maintain their health and withstand and endure in difficult and risky situations, which not only enables them to overcome the hardships, but also strengthens them (Sanderson & Brewer, 2017). Resilience characterizes those who face risk but do not succumb to disorders. Resilience is the person's ability to bounce back from stressful situations and a vital resource that assists the person to manage and cope with various

stressors (Connor & Davidson, 2003). Li and Hasson (2020) demonstrated the vital role of resilience in safeguarding the mental health of the person from the detrimental consequences of any stressful and harmful situation.

Stroke patients have exhibited the lowest level of resilience, which has heightened the vulnerability of this group of patients (DoustdarTousi & Golshani, 2014). Resilience as an internal source of resistance mitigates the negative effects of stress and averts early heart attack (Samani et al., 2007).

Depression is another factor that affects the mental health of cardiac patients. It is one of the most common mental disorders and impacts about a quarter of the patients who visit health centers worldwide. The main signs of depression are low mood or sadness and lack of interest or pleasure in daily activities (American Psychiatric Association, 2013). Depression impairs the cognitive and memory functions of the patients, and makes them face difficulties with decision-making, self-esteem, and hopelessness (Nardini & Papazacharias, 2019). By changing the natural mechanisms of the body such as hormonal levels and platelet activity, depression indirectly increases the risk of developing or worsening coronary heart diseases by 1.5 to 2 times (Rezai et al., 2018).

Studies have shown that severe injuries and negative psychological states have a significant impact on both the short-term and long-term outcomes and raise the risk of chronic diseases such as cardiovascular disorders (Merkt. al., 2017). Therefore, it is vital to preserve the physical and mental health of people with cardiovascular disease. The aim of the present study was to explore the relationship between depression and resilience in this population.

## 2. Method

This research was a descriptive-correlational study. The target population of this research included all cardiac and vascular patients hospitalized in the hospitals of eastern Gilan (Langarud, Rudsar, Lahijan) in 2019. Initially, from each city, two hospitals (private and public) were chosen by convenience sampling and after visiting those hospitals, 150 patients with cardiovascular disease were selected by purposive sampling. The inclusion criteria for the research were having cardiovascular disease, not having serious psychological problems and willingness to cooperate in the research. Resilience and depression questionnaires were administered to them and then the data were analyzed using SPSS software and correlation method.

### 2.1. Instruments

**Conner-Davidson Resilience Scale (CD-RIS):** This scale, developed by Connor and Davidson in 2003, assesses psychological resilience. It has 25 items that are rated on a 5-point Likert scale by the participant. According to the Connor and Davidson resilience questionnaire, people who score more than 50 on this test are resilient and people who score less than 50 are not resilient. The score range of the questionnaire is 25 to 125. Bigdeli et al. (2013) reported a high internal consistency of this scale as 0.9 based on Cronbach's alpha. Compel-Sills and Stein

(2007) standardized the initial resilience scale by selecting 10 items from the original 25 items on a sample of 511 people. The construct validity of the scale was supported by confirmatory factor analysis for both questions with factor loadings from 44 to 93 percent, which indicates the satisfactory and acceptable construct validity for this scale.

**Zung Self-Rating Depression Scale (SDS):** This scale, based on Zung's theory in 1976, aims to diagnose and understand depression of oneself or others. It is a self-report tool that has 20 items. Participants should rate all items on a 4-point scale as 1- rarely 2- sometimes 3- usually 4- often, but scoring in some items (20-18-17-16-14-12-11-6-5-2) is reversed. In Zung's depression, people who score between 59-50 on the test have mild depression, 69-60 moderate, 79-70 severe and above 80 deep. The validity of the questionnaire was 0.89 and its reliability was 0.81 (Zung, 1976).

## 3. Results

This research involved 150 people with cardiovascular disease, consisting of 80 men (53.33%) and 70 women (46.67%). The average age of the participants was 50.43 years, with a minimum of 20 years and a maximum of 79 years. The age range was 59 years. Table 1 shows the mean and standard deviation of the research variables.

Table 1

*Mean and standard deviation of resilience and depression variables*

Variable	Mean	Standard Deviation
Resilience	38.1	9.9
Depression	63.23	11.38

To investigate the relationship between resilience and depression in cardiac and

vascular patients, Pearson correlation test was applied and the results are shown in Table 2.

Table 2

*Correlation matrix of resilience with depression*

	Correlation	Resilience
Depression	Correlation	-0.435
	Error	0.00
	Number	150

The test error was lower than the standard level of 0.05, indicating that the test was significant and there was a relationship between depression and psychological resilience. The correlation level indicated that resilience decreased as depression scores increased among the people.

#### 4. Discussion

The present research aimed to examine the association between resilience and depression among individuals with cardiovascular disease. The results indicated a negative correlation between resilience and depression. These findings are in line with previous studies by Hashemi et al. (2022), DoustdarTousi and Golshani (2014) and Denneson et al. (2017).

These studies suggest that resilience is a form of protection against life challenges that enhances positive emotions and successful coping with adverse experiences. Therefore, individuals with chronic conditions such as heart disease may benefit from resilience, as it may improve their psychological well-being and their coping and adaptation to their illness. Moreover, the present research found that patients with heart failure undergo significant physical, emotional, familial and social changes, and that resilience and psychological well-being may enable them to interact optimally with the stimuli that affect them and avoid depression, anxiety and conflict. Resilience and psychological well-being may

also facilitate their psychological adjustment to their own problems (Harper et al., 2016).

Resilient patients are resourceful and flexible and can adjust to environmental changes and recover quickly from stressful situations. On the other hand, individuals with low resilience may be more vulnerable to their disease conditions and may have a slower recovery from stress (Hashemi et al., 2022). DoustdarTousi and Golshani (2014) also reported a significant relationship between resilience as a personality trait and heart disease, as well as a significant difference between healthy individuals and patients with cardiovascular disease in terms of resilience level. They explained that resilient individuals tend to view negative events more adaptively and realistically and often perceive problems as temporary. Conversely, individuals with low resilience may have less ability to cope with stressful conditions and may experience more anxiety. Anxiety may also be related to depression, which may affect patients with cardiovascular disease, as cognitive biases may lead to a negative worldview and influence the information processing of individuals and cause depression. Additionally, patients with cardiovascular disease and low resilience may attempt to show a positive attitude toward stressors, but may ignore their own abilities and values and become depressed (Momeni & Alikhani, 2013).

The present research had some limitations, such as the restricted sample size to one city and the non-cooperation of some patients. Future research should have more time and resources to collect comprehensive and extensive data and to conduct the study in a broader geographical area to obtain a more valid and reliable result. All relevant organizations, institutions and individuals should support the research goals of the study.

## 5. Conclusion

The results of this research indicate that resilience is an important predictor of depression among individuals with cardiovascular disease.

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## Conflict of interest

The Authors declare that there is no conflict of interest with any organization. Also, this research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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