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Importance of Self-Care, Increasing General Health and Self-Efficacy of Patients with Heart Failure

Abstract

Cardiovascular diseases are one of the most sensitive diseases to psychological states. This type of disease is the leading cause of death in the West. Mental and psychological problems are major issues that patients with heart problems face; for this, patients' psychological states should be identified to mitigate their pains, as failure to pay attention to their stresses and mental reactions could add to their woes. Self-care is a practice in which each child, adolescent, or adult uses his/her knowledge, skills, and capacities to protect his/her and others' health well; for this, self-care is responsible for peoples' mental and psychological health issues. People, in the meantime, can consult others and gain specialized and non-specialized assistance (from both experts and non-experts). Although self-care is an activity that people do to protect and promote their health, this care sometimes extends to children, families, friends, neighbors, locals, and citizens. This study used a descriptive method to investigate self-care among patients with heart failure.

Keywords: *Heart diseases, Mental and psychological issues, Self-efficacy, Health, Self-care*

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Introduction

Cardiovascular diseases are one of the most sensitive diseases to psychological states. This type of disease is the leading cause of death in the West. In the U.S., over half of people above 45 die of heart or circulatory diseases [11]. Therefore, determining whether or not psychological factors are involved in these diseases could have major implications for relevant prevention and treatment processes. Heart attack is one of the most prevalent diseases in human societies, with the U.S. figures reporting around 1.5 million people developing heart attack annually and a large number of hospitalizations, thereby causing economic damages to societies due to the relative incapacity of the patients [12]. In Iran, too, reports by the Ministry of Health, Treatment, and Medical Education suggest that the incidence of heart attack has risen and constitutes the most prevalent cause of adult mortality. As well, it is believed to be the primary cause of mortality among people above 35.

Since the heart is one of the most important and sensitive organs of the human body [13], any damage to it could adversely affect an individual's mental and psychological states, which also includes heart attacks. Numerous surveys on patients over the last year indicate that depression, anxiety, anger, a sense of hostility, and life stressors could underlie heart diseases; on the other hand, heart disease can also cause such behavioral responses [14]. Thus, mental and psychological problems are major issues that confront patients with heart problems; for this, their psychological states should be realized to mitigate their pains, as failure to pay attention to their stresses and mental reactions could add to their woes [15].

Importance of Self-Care in Heart Patients

Heart problems cause well-being issues among people. Each year, 42% of women and 24% of men die of heart attacks. Heart failure is one of the most prevalent cardiovascular disorders and is seen as a chronic, progressive, and debilitating disease. Its incidence rises with rising ages, with almost one percent of people above 50 and around ten percent of the elderly above 80 in the U.S. developing heart failure [1]. On the other hand, advancements in therapeutic and surgical interventions have caused patients, who survive infarction-related deaths, to subsequently develop heart failure [2]. The growing complications of heart failure, caused by infectious, inflammatory, vascular, and valvular heart diseases, is also a major health problem and an epidemic in the U.S., with 5 million people in this country developing heart failure and around 500000 new cases being added to this figure each year. This figure is expected to double in the next 30 years [3]. In Iran, too, figures released by the Center for Disease

Management in 2001 put the number of heart failure cases in 18 provinces at 3337 per 100,000 people. According to an Iranian survey in September 1998, 25% of the patients hospitalized in heart wards had suffered from heart failure issues [4]. Heart failure causes intolerance to activities and results in changes to the patient's lifestyle, thus adversely affecting his/her life [5]. Resulting limitations also cause problems for the occupational, familial, and social lives of patients, thereby resulting in social isolation and depression [6].

Martenson, Dracop, Canary, et al. (2003) concluded that the primary source of depression and undesirable life quality in these patients was caused by various physical symptoms resulting from this disease.

Denderdal et al. also, suggested that the intensity and variety of disease symptoms are threatening these patients, as the feeling of imminent death could cause mood disorders [7]. Anxiety, fear, apprehension, and mood disorders could finally deprive patients of appropriate sleep [8]. Physical symptoms caused by the disease and failure to tolerate activities result in social isolation and dysfunctional sexual relations among patients, thus changing familial and social behaviors and finally reducing their satisfaction with life. Moreover, the need for taking some medicines such as diuretics causes disorders in patients' social relations and affects their quality of life [9].

Chronic diseases are the main challenges to health systems in the 21st century. Today, the epidemic of non-contagious diseases is responsible for 60% of mortalities worldwide. Around 80% of outpatient visits in England and 75% of health system costs in the U.S. pertain to chronic diseases. England projects that the incidence of chronic diseases among the above-65 population will double by 2030 [10].

The advantages of the importance and necessity of self-care for heart failure patients:

- A 40% reduction in visiting general practitioners
- A 17% reduction in visiting specialists
- A 50% reduction in visiting emergency centers
- A 50% reduction in hospitalizations, and
- A 50% reduction in days of absence from work

Self-Care Behaviors

These behaviors refer to acquired conscious and purposeful conduct taught to patients to protect their physical, mental, and social health, meet their physical, mental, and social needs, prevent diseases and incidents, manage their chronic illnesses, and protect their health against acute diseases or after being discharged from hospital [29]. Self-care is a conscious, taught, and purposeful conduct that allows each individual to use knowledge, skills, and capacities as a source to independently take care of their health, family, and society and control diseases [30].

Five Features of Self-Care Definition

1. It is a voluntary behavior
2. It is a taught activity
3. It is a general right and responsibility to protect the health of oneself, family, and relatives
4. It is a part of the care for newborns, children, adolescents, and the elderly.

Self-Efficacy

The concept of self-efficacy, which mainly underlies the Social Learning Theory, was first developed by Bandura in a psycho-social context. According to Bandura's Theory, personal self-efficacy is the feelings of worthiness, sufficiency, and the ability to cope with life. Bandura also posited that self-efficacy is our perception of the extent to which we control our lives (Quoted by Soleimani & Hoveida, 2013). Cassidy and Eachus (1998) argued that self-efficacy referred to an individual's belief in the successful conduct of a special behavior or action (Quoted by Kurbanoglu, Akkoyunlu & Umay, 2006). Bandura (1992) defined perceived self-efficacy to be an individual's faith in organizing and actualizing practical paths required for future condition management while arguing that self-efficacy beliefs suggest how people think, feel, motivate themselves, and work [31].

General Health

According to a definition by the World Health Organization (WHO), health is a state of physical, mental, and social comfort and does not only refer to a lack of disease or inability [33].

Literature Review

Carlson, Spika, Ursolic, et al. (2000) investigated the effects of mindfulness on some homogenous samples of cancer patients. The subjects demonstrated a significant reduction in mood disorders (0.56) and a general stress level of 0.31, compared to the control group.

Grussman, Linhane, and Stephan (2004; quoted by Siers & Karous, 2009) concluded that the mindfulness-based stress reduction-based program could help people get along with various physical and mental health issues such as pains, cancer, heart diseases, depression, and anxiety [34].

The results derived from the Karaca study in (2019) The results derived from this study suggest that the mindfulness-based stress reduction program is effective in reducing the stress experienced by students during nursing education, increasing their mindfulness, strengthening their coping mechanisms for stress, increasing their use of self-confident and optimistic approaches, and decreasing their use of the helpless approach. [35].

(Karen L. Saban2021)MBSR was found to improve psychological well-being and decrease diurnal salivary cortisol in women veterans at risk for CVD. Health care providers may consider MBSR for women veterans as a means by which to improve their psychological well-being. [36].

In a study, 29 female cancer patients participated in an MBSR program. This study was an experimental and control test. After eight weeks of MBSR training, the experimental group saw a significant reduction in stress, anxiety, depression, and rumination scores, while experiencing an increasing rate of attention and concentration. There was also a reduction in static blood pressure among the tested subjects.

Blood pressure is an indicator to identify cardio-vascular patients. MBSR indicated that it can affect hypotension to reduce the risk of developing cardiovascular diseases [37].

In the research conducted by Huijing Zou and other colleagues in (2021)

Nine studies involving 644 participants were included. Compared with inactive controls (e.g. usual care), mindfulness-based interventions significantly reduced depression (SMD −0.72, 95% CI −1.23 to −0.21, $p < .01$) and stress (SMD −0.67, 95% CI −1.00 to − 0.34, $p < .01$), but not anxiety and blood pressure. There were no significant psychological effects compared with active controls (e.g. other psychological interventions). In one of three studies that assessed generic quality of life, mindfulness-based interventions significantly improved psychological and social domains compared with active control. The intervention effects on other cardiovascular risk factors were inconclusive given that only one study assessed each outcome with non-significant findings. Subgroup analyzes suggest that intervention type and participants' depression and anxiety status may influence intervention effects. [38].

In Khalili et al.'s (2023) research, MBCT helped reduce anxiety sensitivity in women with MS. Therefore, psychotherapists can use MBCT as an effective intervention in improving anxiety sensitivity in women with MS. [39].

Table 1 shows the studies done in this field.

Table 1- Studies conducted on the effect of training self-care behaviors on cardiovascular risk factors

U.S.A [42]	2012	Interventional	508	Menopausal women aged 52-62	Society	Lifestyle changes and training nutrition and physical activity	4 years	Lifestyle	LDL-, HDL-C, weight loss C, blood pressure, triglycerides and blood sugar
Norway [43]	2011	Interventional	498	Children aged 11-15	School	Training in school classes and in between lessons	30 years	Lifestyle	Improved BMI, cholesterol, triglycerides, and blood pressure only as a result of training fathers (mothers)
The Netherlands [44]	2011	Randomized clinical trial	80	Children aged 8-17	Society	7 training sessions for children, 5 training sessions for parents	2 years	Lifestyle and increasing trust	Significant reduction in BMI, cholesterol, triglycerides, blood pressure, and blood sugar (P<0.05)
U.S.A [45]	2011	Case-control	279	Middle-aged with a BMI of above 25	Clinic	Training software by a general practitioner	2 months	Lifestyle	Improved blood cholesterol, blood pressure, blood sugar, and energy intake (P<0.01). A loss of over 5% of body weight along with blood LDL
Japan [46]	2009	Case-control	463	Middle-aged	Society	6 months of training and 9 months of support program	15 months	Lifestyle	Significant reduction in BMI, cholesterol, triglycerides, blood pressure, and blood sugar (P<0.05)
U.S. [47]	2009	Interventional	1093	Hispanic middle-aged women	Society	Lifestyle interventional training	9 months	Lifestyle	Significant reduction in BMI, cholesterol, triglycerides, blood pressure, and blood sugar (P<0.05)

U.S. [48]	2008	Interventional	66	Children with an age average of 11 years	Family	Multipurpose, family-oriented, and family counseling	2 years	Lifestyle	Significant reduction in BMI, total cholesterol, LDL, and triglyceride (P<0.50), HDL, and insulin (P>0.05)

Applied Questionnaires of Self-Efficacy, Self-Care, and General Health in Heart Patients

The research on self-efficacy and self-care in heart patients makes use of the following questionnaires:

1. General Self-Efficacy Scale (GSES):

In the research conducted in the field of self-efficacy, Sheng-Yu Fan and by et al. in (2022) Hospice staff who perceived higher stress and lower growthdue to hospice care and had lower self-efficacy in providing hospice care experienced higher burnout and lower compassion satisfaction. Those who had a lower level of ability related to self-awareness and managing emotion tended to experience higher burnout. The common coping strategies include seeking social support, taking professional courses for clinical skills, and developing hobbies. [49]

This scale includes 17 items and has three subscales the tendency to initiate, the tendency to develop efforts to fulfill assignments, and resistance when facing obstacles. For each item of this scale, five responses are suggested, each scored from 1 to 5. The scoring procedure is based on a 5-degree Likert scale (1-5). Higher scores indicate stronger self-efficacy, while lower scores indicate weaker self-efficacy. Jahani's study (2010) used Cronbach's alpha to obtain a reliability coefficient of 0.740. Sherer (1982) showed an estimated reliability of general self-efficacy of 0.76 by Cronbach's alpha. The validity of this scale was obtained through construct validity [49].

2. Heart Patients' Self-Care Behavior Questionnaire:

The European heart failure self-care behavior scale was developed by Jarasma et al. in 2003. This scale includes 12 items, with each item answered on a 5-option Likert Scale from "absolutely so" (score 1) for appropriate behavior to "absolutely not" (score 5). In sum, the score obtained varies from 12 to 60 and lower scores mean better self-care. These scores are measured based on a 5-degree Likert scale (1-5). The validity of this scale was demonstrated in the study by Shojaei et al. (2010) through content validity. For this, the scale was first prepared by presenting it to scientific sources. Then, it was translated into Persian in a simple and fluent form, and the initial scale was developed by using the views of supervisor and advisor professors, as well as statistics consultants. Later, for polling, the scale was provided to 10 members of the Nursing and Midwifery Faculty of Iran University of Medical Sciences. Following the survey of views, the scale was introduced to the Research Affairs Committee for final evaluation. In the end, the Council of Tertiary Education of the Faculty announced its permission to use the scale. The reliability of the scale was measured by Cronbach's alpha as follows: the researcher visited research centers and provided the questionnaires to 25 patients with heart failure. The resulting data were entered into SPSS software (version 10), and the alpha coefficient of the questionnaire was obtained to be 0.68 [50].

3. General Health Questionnaire (GHQ) (28-item form):

The general health questionnaire was developed by Goldberg and Hiller in 1979 [45] and has 4 subscales, with each scale including 7 items. The scales are as follows:

1. Somatic symptoms scale
2. Anxiety Symptoms and Sleep Disorder Scale
3. Social function scale
4. Depression symptom scale

Out of the 28 items of the questionnaire, items 1 to 7 pertain to the somatic symptoms scale. Items 8 to 14 measure anxiety and sleep disorder symptoms and items 15 to 21 evaluate social function signs. In the end, items 22 to 28 measure depression symptoms. To conclude the scores, a, b, c, and d were assigned scores 0, 1, 2, and 3, respectively. In each scale, a score above 6 and a sum of scores above 22 indicate morbid symptoms [50].

Table 2 shows the information on the questionnaire

Table 2: Cut-off scores in each subscale of the GHO questionnaire

Subscales	Subscale scores	Total questionnaire scores
None of the least limit	0-6	0-22
Mild	7-11	23-40
Moderate	12-16	41-60
Extreme	17-21	61-84

Conclusion

Over the past two decades, the treatment of heart patients has seen many advancements; however, the prevalence of coronary diseases is on the rise, with nearly 11 million people across the world being diagnosed with this disease [7,8]. According to researchers, this disease has been one of the costliest diseases for national health services. For example, in the U.S., direct

and indirect costs of this disease are estimated to amount to around $33.2 million, with much of the costs spent on hospital expenses [16]. This disease causes a weak prognosis, limits physical activities, interrupts social interactions, causes mental distress, anxiety, and depression, reduces happiness, increases dependence, results in early retirement, and leaves a negative impact on life quality [17]. Various factors such as anxiety states and depression, social stressors, conflict, and hostile behavior may cause anomalous coronary contraction, increased obstruction of coronary arteries, malignant arrhythmias, and consequently heart failure [18]. Furthermore, acute and chronic mental and social stresses and negative emotions may affect various coronary indicators [19]. This finding stresses the need to investigate these variables to treat cardiac diseases. Mental and social factors could, directly and indirectly, use physiologic risks and increase the likelihood of developing cardiac diseases [20]. Research has shown that acute and chronic stresses are the major risk factors involved in cardiac diseases [21]. Anxiety and depression are the most prevalent acute coronary diseases, which aggravate these diseases. Severe anxiety symptoms and acute and chronic stresses are associated with the tripling of the risk of sudden cardiac deaths [22]. Much evidence suggests that negative emotions and anxiety may leave acute and chronic effects on the cardiovascular system. Familial stress and anxiety not only cause physiological issues but also result in the lack of attention to positive health behaviors while affecting cardiovascular diseases [23]. If not treated, anxiety can cause cardiac diseases to persist [24]. Concerning the psychological problems of heart patients, such as anxiety, stress, and depression, there are various approaches, including pharmacotherapy, psychotherapy, and combination therapies. In psychotherapy, cognitive-behavioral therapy was developed in the 1920s [19]. However, following critics of this approach, other integrated methods were presented for the treatment of these problems. For example, mindfulness-based cognitive therapy was found to have a significant effect on treating and preventing the recurrence of anxiety and depression [25]. Mindfulness is a kind of meditation that has roots in Eastern religious teachings, especially Buddhism [26]. This type of cognitive therapy includes various mediations, stretch yoga, primary depression training, body review exercises, and several cognitive therapy exercises, which show the relationship between mood, thoughts, feelings, and body senses [27]. All of these exercises help increase attention to bodily and surrounding situations at the present moment and reduce the automatic processing of anxiety and depression [28]. Mindfulness meditation helps activate an area of the brain, which creates positive emotions that affect the functioning of body immunization [28].

Findings from the investigation of the relationship between self-care behaviors, self-efficacy, and general health among patients with heart failure (based on the health promotion model) can greatly contribute to developing a reliable therapeutic model for the promotion of general health in patients with heart failure. The findings can also be used to train self-care behaviors using developed protocols. Since patients with heart failure suffer from inefficacy and inability to perform daily activities and personal functions, they can be trained to increase their self-efficacy by providing them with self-care training. The findings of this study can be used by students, medics, and professors. This study can also be utilized by the families of heart patients to follow drug regimens.

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