



# Adjustment to Chronic Diabetes: A Review and Analytical Study

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## Abstract

Diabetes is a chronic disease that disrupts human biological and psychological interaction; so that the person's adaptation to the disease is necessary. The present study aimed to review the psychological methods related to adaptation to diabetes. This research is a narrative review study that has been done using the keywords diabetes, self-care, adaptation and, adjustment in specific databases of Medline, Sid, Magiran, PubMed, Scopus, and Science Direct. After reviewing the entry and exit criteria, articles that were not directly related to the topic, as well as articles with duplicate findings were removed. The findings showed that self-care is a spectrum of behaviors of a person that includes diet, medication, exercise, etc., and is influenced by individual and social factors and indicates the degree of adjustment to chronic diseases such as diabetes. Psychological factors not only affect different aspects of the life of people with diabetes, but also affect self-care and management behaviors and achieving proper control in people with diabetes.

**Keywords:** Diabetes; Self-care; Adaptation; Adjustment; Chronic disease

## Introduction

Chronic illness is a disease that is long-lasting or inherently long-term. These types of diseases will be accompanied by a rapidly growing trend in the coming years all over the world, especially in developing countries [1]. Diagnosis of chronic diseases such as diabetes initiates a process of continuous evaluation to adapt the patient to the needs and limitations imposed by the disease [2]. Diabetes is one of the most challenging chronic diseases. In this disease, the body's ability to produce the hormone insulin is lost or the body becomes resistant to insulin and the insulin produced cannot function normally. There are two main types of diabetes, type 1, and type 2 diabetes. In type 1, the destruction of beta cells in the pancreas leads to a defect in insulin production, and in type 2, there is progressive insulin resistance, which can eventually lead to the destruction of pancreatic beta cells and a complete defect in insulin production. In type 2 diabetes, genetic factors, obesity, and

sedentary lifestyle play an important role in the disease [3].

In diabetes, the body's ability to use and metabolize glucose is completely reduced. Hence, high blood sugar, which is called hyperglycemia [4]. When there is a long-term increase in blood sugar in the body, it causes the destruction of small blood vessels in the body that can affect various organs such as kidneys, eyes, and nerves. Diabetes is also directly associated with an increased risk of cardiovascular disease [3].

Diabetes is associated with stress and changes in individual, interpersonal and social functioning. Adapting to diabetes requires managing and controlling it. The important thing is that the sufferer should be responsible for their illness. The main responsibility for controlling and adapting to it lies with the patient [5]. Diabetes control is affected by a complex network of behavioral, attitudinal, and health care factors that collectively challenge psychological and social

adjustment in these patients. These individuals must cope with and adapt to life-threatening changes to achieve an acceptable level of psychological and social functioning and ultimately better control of diabetes [6].

Compatibility is a response that adapts appropriately to change. This definition shows that adaptation occurs over time and is gradual. The psychological adjustment refers to a relatively desirable state [7]. Incompatibility is associated with anxiety, depression, helplessness, and behavioral problems. Adapting to illness is seen as a process of maintaining a positive view of oneself and the world in the face of health problems [8].

According to the Zinc adaptation model, adaptation takes place in four physiological dimensions: self-perception, role, and interdependence. The physiological dimension is primarily responsible for maintaining the physiological balance of basic needs such as activity and rest, nutrition, excretion, oxygenation, and protection. The dimension of self-understanding includes self-awareness of the physical self, the self-personality, and the individual self. The role-playing dimension is related to the behaviors that society expects from the individual. And then interdependence is described as the ability to love, respect, and receive love, respect, and value [9]. Adaptation to chronic disease is a dynamic process that is constantly affected by individual and environmental stimuli and requires continuous management [10]. In this process, the sufferer must face individual and environmental challenges to achieve an acceptable level of health and physical, mental, and social function [11].

Self-care behavior is a key concept in achieving psychological adjustment and health promotion and includes the decisions and activities that a person uses to adapt to illness and improve themselves [12]. Patients with chronic diseases use a wide range of adaptation strategies for greater adaptation. Patients need time to adapt to the disease and learn to change their lifestyle and also need constant monitoring of their ability to control the disease. This control includes emotional and skill dimensions that enable patients to better manage their physical and mental condition [13]. Diabetes self-care behavior refers to patients' actions to deal with the physical and psychological effects of their disease, which is based on knowledge and skills [14] and has a great impact on patients' quality of life [15].

According to a study, the most important underlying cause of death in diabetic patients is lack of self-care [16]. Because diabetes is often associated with psychological problems and disorders, these problems reduce the patient's ability to self-manage the disease. Decreased ability of patients to control diabetes exacerbates their psychological problems and causes patients to fall into a vicious cycle.

These problems may even be exacerbated by patients' psychological reactions that negatively affect the experience of diabetes symptoms [17]. There is a significant difference between two people who are in the same medical condition in terms of reactions and disabilities that occur, as well as their social and physical functioning. One of the factors that can be crucial in explaining this difference is the underlying psychological methods of diabetics to cope and adapt to the disease [18]. Personality, psychosocial, and emotional factors can lead to unhealthy lifestyles, lack of control over the amount of food consumed and increased, lack of self-care behaviors, inactivity and lack of exercise, and ultimately failure to follow treatment, which is not the only method. Psychological factors affect the adaptation to diabetes, but the result is a fluctuation in the control of blood sugar in patients with diabetes.

Since individual and personality factors can play an important role in the emergence, course, management, and treatment of diabetes, this study aimed to review and review the psychological methods related to adaptation to diabetes.

## Method

The present study is a narrative review study. In this study, the keywords diabetes, self-care, and adaptation were searched in scientific databases such as Medline, SID, Magiran, PubMed, Scopus, and Science Direct in both Persian and English. The criterion for including articles in the study is scientific research studies conducted in the years 2000 to 2020 and also having a high citation; the criterion for their exclusion from the study was the lack of direct connection with the subject under discussion and also the repetition of the findings of the articles.

## Findings

By studying Persian and English research documents, the following findings were obtained:

### Depression, Anxiety, and Stress

Patients with diabetes usually suffer from psychological symptoms after diagnosis and during the treatment process, and during the adaptation to their disease, they report experiencing symptoms of anxiety, depression, and stress [19], because they are aware of illness, a person is forced to restrict some of his life freedoms, such as the amount and type of food consumption and sometimes the amount of physical activity, and finds many problems in adapting to the diet after being diagnosed with diabetes [20]. Depression and anxiety are also the most common psychological disorders among diabetics [21]. In studies [22] the prevalence of depression in patients with diabetes is 1.5 to 2 times and

Chin and Lane [23] the prevalence of anxiety disorders in patients with diabetes is 1.1 to 2.25 times higher than Non-diabetic individuals have reported. In the study of Chen, et al. [24] Depression hurt self-care behaviors of diabetic patients.

It has always been difficult for a person with diabetes to accept that they have to change their lifestyle based on the disease. Since people are often aware of the short- and long-term effects of the disease, emotional reactions such as depression and anxiety will not be far from the mind, and in the meantime, not understanding the mechanism of the disease reduces people's adaptation to the disease and adherence to treatment [25]. There is also some evidence that diabetics suffering from depression did less exercise and smoked more [26].

### Coping

Coping involves all the cognitive and behavioral efforts that are made to control, reduce, or tolerate internal or external demands. Coping styles include problem-oriented and emotion-oriented strategies. Problem-focused strategies refer to strategies that address the issue that caused the emotional turmoil, and emotion-focused strategies refer to strategies that address emotional regulation [27].

The patient's adaptation to the disease and the provision of special care causes many challenges in his life that make the use of coping behaviors necessary for adaptation. Sometimes a diagnosis can lead to a spiritual crisis, and sometimes it can jeopardize a patient's self-confidence and religious faith. Also, personal communication seems to be disrupted due to uncertainty about the future and inadequate adaptive mechanisms. Hospitalization may also make a person feel lonely. Therefore, the use of coping methods seems necessary. Religion and religion as countermeasures have positive effects on the healing process because, in such circumstances, religion is considered as a refuge in life crises and acts as a very strong base against the difficulties and deprivations of life. Among religious and spiritual sources, the most used source is prayer, because prayer reduces anxiety and promotes spirituality and is a good way to adapt to illness [28].

The effect of a stressor [such as diabetes] on individuals depends on the characteristics of that factor as well as cognitive assessment strategies and coping techniques. So, if coping and assessment strategies are appropriate, the individual is adapted to the situation. It is fresh, facilitated and the person adapts to the new situation. But if psychological coping strategies are inadequate or inadequate, individuals should seek out more coping and supportive resources to obtain a fresh and appropriate plan for the stressful situation, which may eventually lead to disturbing reactions

and mental disorders [29], as in one study, the likelihood of depression was correlated with coping strategies in these patients [30].

### Self-efficacy

Self-efficacy in overcoming barriers in diabetic patients and adaptation to disease are correlated in them. The ability to overcome obstacles means judging one's abilities to overcome obstacles and limitations in performing a particular behavior. Such a person believes in overcoming obstacles while performing the behavior. Personal problems always hinder behavior and form an integral part of self-efficacy assessments. Beliefs of self-efficacy in the face of existing challenges are generally successful [31].

Self-efficacy can empower a person to adopt health-promoting behaviors and quit behaviors that are harmful to health, affect a person's motivation, and motivate a person to strive and persevere in behavior. Self-efficacy due to strong beliefs about a person's ability, directly and on the other hand, by increasing self-management, causes a person to feel good, calm and as a result, improve life expectancy. People with high self-efficacy do not perceive their problems and tasks as a threat, but try to be stubborn in overcoming tasks and achieving their goals. The belief that the patient is in control of life events and illness and can face the challenges that arise strengthens the sense of self-confidence and makes the person more eager to reduce the risks [32].

Poor self-efficacy is also associated with poor self-care behaviors and lack of glycemic control of blood pressure in diabetic patients, and this correlation affects diet and exercise and self-efficacy and self-care behaviors [33].

### Self-esteem

When people are exposed to risky conditions such as diagnosing a threatening illness, cognitive adjustment is used to improve self-esteem [34] and optimism [35] by overcoming existing conditions. Self-esteem is self-confidence in one's ability to think, cope with life's basic challenges, self-confidence in one's right to be successful and happy, feeling valuable and worthy, and reaping the fruits of one's efforts [36].

Self-esteem is the core of the diabetic patient's psychological structure that protects him against anxiety and plays a role in the patient's emotional and social adjustment [32]. Patients with good self-esteem see most of the good aspects of things and try to be optimistic about different problems. High self-esteem causes comfort, stability, social and behavioral adjustment and also prevents disorders and distress among patients. Patients with high self-esteem use

more adaptive self-regulation strategies than those with low self-esteem [37].

### Resilience and Persistence

Resilience teaches diabetics the skills to think and then act resiliently when faced with problems and stressful situations, given that people with diabetes are always attacked. The series of thoughts are disturbing; therefore, resilience makes it possible to draw and access a list of resilient strategies by influencing thought processes as a fundamental sense of individual control. As a result, it plays an important role in dealing with stressful life events and acts as a source of resistance and protective shield [38]. Hardiness is a protective factor against stressful situations that play a role through cognitive assessments and coping behaviors. Hardworking people find stressful life events acceptable and a normal and interesting part of life. Hardiness such as resilience with components such as commitment, controls, and struggle; Makes it possible to deal with stressful events [39].

Having and cultivating a hard-core personality trait leads to self-efficacy in managing diabetes, thereby reducing the problems associated with diabetes. Instead of running away from the disease, highly committed patients seek to absorb it and seek appropriate ways to change such experiences. Controlling patients feel that with more effort, they can be unaffected by events and show themselves in the face of powerful debilitating conditions [40]. Also, resilience is a factor for psychological toughness and adaptability in dealing with the consequences of diabetes [41], a factor for resilience and prevention of diabetic patients with cardiovascular complications [42], a factor for creating a positive attitude towards life [43].

In terms of the role of gender in adaptation to diabetes, the results show that the adaptation process is different in men and women. In Iranian society, in the process of culturalization, women have been trained in a way that they can endure the hardships and problems of life, and this has increased their resilience. Women, on the other hand, are more committed to managing their illness than men, and this commitment helps reduce their stress and anxiety. This can lead to the organization of positive emotions and feelings to be more adaptable and resilient to the disease in women. Men have psychologically strengthened their self-confidence and self-esteem because they have multiple responsibilities throughout their lives and because in many cases, they may be able to handle these responsibilities well. As a result, they have high self-esteem in the face of diabetes. Male patients may also feel more in control of their disease than female patients [44].

### Control Source

Source of control means one's beliefs about the role of internal or external forces in health control [45]. Some people believe that they have the most control over their illness. Others believe that others, caregivers, luck, destiny, or God is responsible for their illness or health [46]. Some studies have shown that the source of controlling internal health and belief in God play a good role in psychosocial adaptation to illness [47].

### Self-Compassion

Self-compassion refers to caring and understanding oneself instead of taking a hard and critical view of oneself. One way to alleviate suffering is to build compassion for yourself and others. The concept of self-compassion means being kind to oneself and having a non-judgmental understanding of one's shortcomings. The concept of self-compassion is also defined as experiencing and being influenced by the suffering of others; In such a way that the person becomes more tolerant of his problems and sufferings.

For a diabetic patient, self-compassion means having a positive attitude toward oneself when things go wrong. Compassion itself is seen as an effective trait and factor in fostering emotional resilience [48], and the acceptance is that suffering, failure, and inadequacy are part of living conditions and that all human beings, including the individual, deserve kindness and they are compassionate [49].

For health-related interventions, especially to reduce feelings of loneliness and blood sugar, as well as increase self-care behaviors in patients with diabetes, compassion-based therapy is recommended along with other treatments [50]. In research, he has suggested more detailed plans to promote the components of self-compassion and emotion regulation as important and effective factors in improving self-care and adherence to treatment [51].

Self-compassion was significantly lower among people with diabetes with severe or moderate to severe symptoms of depression and anxiety compared with those with mild or no symptoms [52]. Also, higher levels of self-compassion are typically associated with improved self-management behaviors, medical prognosis, and psychological well-being in adults with diabetes [53]. Also, while depression and severe psychological distress are often associated with diabetes and have led to reduced adherence to medication and healthy living and diet, poorer blood sugar control, and increased complications; Self-compassion in these patients reduces negative self-criticism and improves motivation to engage in self-care behaviors [54].

## Mindfulness

Mindfulness increases conscious attention to bodily senses and awareness of emotional experiences and non-judgmental thoughts [55] and means awareness of the present moment without judgment. The result of this awareness is that one realizes that no situation is fixed and cannot easily be considered good or bad.

Attention to awareness provides the possibility of adaptive coping and management of undesirable stimuli. People with higher mindfulness report better emotional and behavioral self-regulation and show more compassion for themselves [56]. Positive mindfulness combined with increased self-compassion can be considered an emotion regulation strategy that allows the person to accept their feelings kindly. Thus, negative emotions change into positive emotions and the person finds new ways to deal with them [57].

Mindfulness can increase adherence to diabetes self-care programs in the patient [58] and control blood pressure and improve the psychological symptoms of patients with diabetes by increasing the range of self-attention and pursuing treatment programs. Increase diabetes [59]. For this reason, it has been suggested that in addition to conventional drug therapies, mindfulness-based interventions may be used in diabetes centers and clinics to increase the self-care of people with diabetes [60,61].

## Social Support

Social support is the resources and reciprocal relationships provided by others to help a person cope with his or her problems [62]. There are two general types of social support: tangible support, which includes material resources; and psychological support that helps people to create the desired emotional states in the community [63].

Social support, especially family support, has been influential emotionally, informationally, economically, access to health care, and the network of social relationships between diabetics, including social factors. Most patients who have good control should state that the main factor in controlling their blood sugar has been the support and encouragement of others, especially their families. In research, social factors, especially the family, have had the greatest impact on the acceptance or non-acceptance of a preventive lifestyle because most of the daily life of these patients is done at home and in the family center, therefore, this institution can play a significant role in proper blood sugar control. In clinical observations, diabetic patients who received less family support were more likely to experience symptoms of depression, anxiety, and hopelessness about

the future. Receiving social support, especially from the family, facilitates adaptation to the changes made, and as a result, leads to better adherence to the treatment regimen and proper control of blood sugar. Their results also showed that increasing the patient's perceived social support leads to increased adherence to self-care behaviors [58,64]. According to other studies, living with family members and receiving support from them promotes self-care behaviors in the field of exercise and diet, and as a result, these patients can control their blood sugar well [65].

## Discussion and Conclusion

This study aimed to review the methods and psychological principles related to adaptation to diabetes. The results of this review showed that psychological and mood disorders, emotion-oriented and problem-oriented coping strategies, self-efficacy, self-esteem, resilience, and rigidity, source of internal and external control, self-compassion, mindfulness, and social support; They are psychological factors, principles, and methods that have good effects on the adaptation of patients with diabetes to their disease and its consequences.

Achieving health in chronic disease is possible by establishing adaptation in different dimensions of the patient's existence [physical and mental dimension]. Successful coping with diabetes problems promotes diabetes self-management and self-care and ultimately improves the patient's quality of life [66]. Adaptation to chronic diabetes is an important factor in involving the patient in treatment and helping the process of treatment decision-making and disease control [67]. This adjustment is one of the most important variables in diabetes because it is directly related to self-care behaviors [68], and is associated with better glycemic control [69].

The most important factor in controlling diabetes is self-care behaviors and is the first step in helping patients to better care for and manages the disease [70]. The physiological dimension of life, including nutrition, exercise, how the disease progresses and its complications, prevention methods, blood sugar control, and treatment, are important aspects of self-care. Effective diabetes management requires the implementation of complex self-care behaviors such as lifestyle changes, diet control, regular exercise, medication use, glucose control, and recording, and diabetes treatment outcomes are significantly dependent on patients' self-care behaviors [71]. The psychological, social, and emotional dimensions of self-care include managing emotional outcomes such as depression, anxiety, and stress, as well as resolving social problems and gaining social support.

In short, diabetes as a chronic disease requires personal management of the disease. Sometimes certain conditions

of the disease interfere with daily life due to the need for serious control. The fundamental question in adapting to chronic diseases from the perspective of health psychology is which psychological factors and which coping behaviors produce the best results in the face of the chronic stressor. Based on the studies conducted in the present study, several cases should be considered:

1. Adaptation to chronic illness is necessary for different areas of life,
2. Compatibility is not static but represents a process that unfolds over time.
3. Looking at the research literature on adaptation to chronic disease, one can observe at least five concepts of this process: mastering adaptive tasks related to the disease; maintaining functional status; Lack of psychological disorder, relatively low reports of negative emotion, and perceived quality of life in various areas. These concepts of adaptation show that adaptation is multifaceted and includes interpersonal and internal aspects as well as cognitive, emotional, physical, and behavioral components. For example, negative emotions affect a person's performance in controlling blood sugar.
4. Neurological and cognitive disorders caused by diabetes indicate a strong association between diabetes and emotional and psychological disorders such as stress, anxiety, depression, and other psychological disorders. Psychological factors and principles not only affect different aspects of the life of people with diabetes but also affect their self-care behaviors, management, and achieving proper control. People's ability to stay healthy depends on having mental energy and the ability to adapt to stimuli.
5. Every stimulus that enters one of the dimensions of man, presses the other dimensions as well. Man is constantly facing the physical, social and psychological changes of his environment and must interact with them to achieve adaptation. Diabetes disrupts the biological and psychological interaction of the organism so that it requires adaptation to the disease.

Self-care is a range of behaviors of a person that includes diet, medication, exercise, etc. that are influenced by individual and social factors and indicate the degree of adaptation of a person to a chronic disease such as diabetes. Self-care education is one of the basic strategies in adapting to diabetes.

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