The Effectiveness of Cognitive-Behavioral Stress Management on Social Adjustment and General Health of Patients with Diabetes

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Research Article

Keywords: Stress Management, Social Adjustment, General Health, Diabetes

DOI: https://doi.org/10.21203/rs.3.rs-799160/v1

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Abstract

**Background:** The current study aimed to evaluate the effectiveness of cognitive-behavioral stress management on social adjustment and the general health of patients with diabetes in Ahwaz.

**Method:** It is semi-experimental research with pre-test and post-test design and two groups. The statistical population included patients with diabetes, 30 of them were selected as the research sample and were randomly assigned into two groups of 15 (one experimental group and one control group). Bell's social adjustment questionnaire and General Health Questionnaire (GHQ) were used to measure variables.

**Results:** The results showed that the post-test scores of social adjustment and general health were significantly different in the two groups.

**Conclusion:** Cognitive-behavioral stress management can be effective in improving social adjustment and the general health of patients with diabetes, and it is necessary to pay attention to the psychological state of patients suffering from diabetes.

**Key Points For Policy, Practice, And Research**

- Stress Management is an acquirable and learnable skill.
- Health care organizations, policymakers, and educators should address strategies that promote the development of adaptive Stress Management in nurses.
- Nurses must manage stress well and be able to educate the patient.
- Due to the acquisitive nature of Stress Management, we can take effective steps for implementation of Stress Management through nurses, patient and consequently increase of quality of nursing care.
- Fundamental nursing is complex to determine but is best understood through the provision of care for ‘whatever the patient needs’ in a caring way.

**Background**

Increased progress in the incidence of chronic diseases worldwide and the high mortality and increasing costs of care for these patients, and in particular the essential role of psychological factors in the onset, continuation, and intensity of the symptoms in these patients have led us to focus more greatly on psychological aspects (Finkelstein, Finkelstein 2000). The need for counseling centers and psychological techniques as well as physical interventions is increased day by day because counseling can effectively reduce the psychological symptoms in chronic patients. This point has been taken into account in the standards of treatment recommended by the American Diabetes Association emphasizing that management is fundamental for treatment of all people with diabetes in addition to the role of psychological factors along with other factors (Straub 2001). Various therapeutic approaches are suggested for diabetes, one of which is cognitive-behavioral stress management. author called stress an
unknown body response to any demand (Selye 1980). A group of scholars has identified stress as a common disease of the century. Stress can deplete the forces and affect the activities and efforts (Nezami 2008). When stressor affects human life, our emotional state and physiological thinking are not normal and balanced; cognitive activity becomes vulnerable and behavioral problems are called as a sense of anxiety and depression (Rio 1999). Psychologists have defined stress as the organism coping (Ratus, 2007). Severe and long-term stress such as changes in life (Harkness, Luther 2001.) can affect an individual's ability to cope, cause depression, damage the body, and eliminate the pleasure of life.

Cognitive-behavioral stress management refers to a set of techniques used to reduce the stress experienced by individuals or to increase their ability to cope with life-threatening stress. In various studies, the effect of this treatment on physical and psychological problems has been confirmed during follow-up (Glaser et al 1986).

One of the variables considered in this research is the social adjustment. Adjustment as the main issue of this era is fundamental for good performance, facilitates social role and causes more satisfaction with life. The emergence of incompatibility causes problems in social relations, the tendency towards social and moral deviations, and the decline of cultural values in a person (Bandura et al 2003). From Adler's point of view, a person with mental health recognizes the intimate and desirable family relationships.

Also, a healthy person has purposes and goals in life, and his actions are based on reaching these goals. The ultimate goal of a healthy person is to realize himself. Another feature of psychological health is that the healthy person regularly examines the nature of his goals and perceptions and removes his mistakes. Such a person is the creator of his own emotions, not their victim. Creativity and physical initiative, are other characteristics of these people. A healthy person avoids basic mistakes. Basic mistakes include absolute generalization, inaccurate and impossible goals, inaccurate understanding, unjustified expectations of life, diminution or denial of one's value, and wrong values and beliefs. Diagnosis of chronic diseases, such as diabetes, is the initiation of a continuous evaluation process to adjust the needs and constraints imposed by the disease. Good adjustment allows the patient to make changes that guarantee his health (Michael 1996). Adjustment with the disease is the process of maintaining a positive attitude towards self and the world despite having physical problems (Kolokotroni, Anagnostopoulos, Missitzis 2017). The process of adjustment with a chronic disease is a dynamic process that is constantly affected by individual and environmental stimuli, and the patient can achieve more favorable self-control of his disease by increasing the amount of physical and cognitive adjustment (Sadeghnejad, Vanaki, Memarian 2009). In this process, the patient copes with environmental and individual challenges to achieve a satisfactory level of physical, mental and social health and performance, and thus to achieve successful adjustment (Afrasiabifar et al 2010). Successful adjustment with diabetes-related problems increases diabetes self-management and ultimately improves patient's quality of life (Tol et al 2012). Adjustment in the process of chronic disease treatment is an important factor in attracting patient involvement in the treatment and assisting in the healthcare decision-making process (Amini et al 2012).

The next outcome variable of this study is general health. General health is the complete physical, psychological and social well-being of the individual, and there is a dynamic and mutual effect among
these three aspects. Therefore, mental health is considered as one of the determinants of general health. The concept of mental health is to feel good and to ensure self-efficacy, self-reliance, competition capacity, intergenerational belonging, and the self-actualization of potential intellectual, emotional abilities, etc. (Geneva 2001). Also, Kersini considers mental health as a mental state, with relatively released emotional health from signs of anxiety and inability to establish constructive relationships, to cope with the stressors in life (Hadadi, Roshan, Asghar Nejad 2007). The formation of a strong scientific mindset and the achievement of the abilities necessary to achieve academic success cannot be realized spontaneously, and the constituent factors of this capacity are formed during the years of personality development, and thus the role of the family in creating these capacities is highlighted. Mental health is necessary for maintaining and sustaining the social, occupational and academic performance of the individuals (Bahreynian, Noor 2004 ). Health is the triple response of the physical, psychological, and social statuses to the internal and external stimuli to maintain stability and comfort (Shariati et al 2002 ). According to the WHO, 52 million people with different ages suffer from severe psychological illnesses, and 250 million people have mild illnesses. These figures in Iran are not lower than that in other countries (Shariati 2002). In the National Health and Disease Survey in Iran, the rate of disorders in people over the age of 15 years was reported to be 21% using the GHQ-28 (20). A person with mental health is aware of his goals and has a lot of guts to reach them (Noorbala 1999).

In contrast, mental disruption reduces one's self-awareness and disrupts his orientation. Mental illness is not specific to a particular class and includes all social classes. This risk threatens current and future generations (Ahmad vand 2004). Regarding the high prevalence of this disease with high mental disorders in the general population, as well as the lack of psychological research in this field, the present study aimed to assess the effectiveness of cognitive-behavioral stress management on social adjustment and general health of patients with diabetes.

**Methods**

The present study was semi-experimental research with pretest-posttest design and control group. The study population included patients with diabetes in Ahwaz. In this research, after studying patients with diabetes, 30 were selected using the convenience method and randomly divided into two groups: control and test. Then, the test group received stress management training based on Antony's book in 10 two-hour sessions in two weeks, but no treatment was performed for the control group. Treatment sessions include anxiety reduction techniques, such as muscle relaxation, which can both prevent physical and mental illness and reduce physical pain. Relaxation training was progressive and included abdominal breathing, relaxation training with 16, 8, and 4 muscles, the passive relaxation, the avoidance training for warmth, avoidance training for heart rate, breathing, abdomen, and forehead with illustration, and Mantra's meditation. The first twenty minutes of each session was allocated to the relaxation training. Cognitive reconstruction involves training cognitive errors, automatic thoughts and negative beliefs, how to challenge them, training cognitive and behavioral coping skills such as problem solving skills, courageous behaviors, strategies to increase self-confidence, anger training and management, and strategies of attention control and the distraction of attention from pain, all of which help reduce the level
of stress. This part of training took forty minutes of each session, and the final hours of the sessions were dedicated to examining the homework and talking about problems in doing homework. Then, both groups participated in the post-test and the results were analyzed. In addition to interviews, some research tools related to the inclusion and exclusion criteria of subjects to this study included the general health questionnaire and social adjustment questionnaire in two pretest and post-test stages.

Social Adjustment Inventory: Bell developed the adjustment inventory in 1961. He has provided two adjustment questionnaires, one for university and school students, and the other for adults (present form), which consists of 32 phrases. This form includes five separate levels for measuring personal and social adjustment that are: 1) home adjustment, 2) fitness adjustment, 3) social adjustment, 4) emotional adjustment, 5) job adjustment. The present form only covers social adjustment. The validity of the questionnaire was obtained in two ways: First, the terms of each section of the questionnaire were selected in a way that the difference in score distribution between 50% of upper people and 50% of lower people was evident, so in this questionnaire, there are cases that only show explicit distinction between these two completely different groups. Second, the questionnaire has been developed as a result of the efforts of experts in counseling with adults who had very good and very poor adjustments, as well as in determining the extent to which the questionnaire can distinguish between them. The reliability of the social adjustment section of this questionnaire is 0.88, which has been determined by the even/odd correlation method and the Spearman-Brown formula. Also, the validity of this questionnaire in Iran has been standardized by Delawar for Iranian athlete veterans. It was also studied by Agha Mohammadian Sherbaf, who achieved similar results (Yavary 2014, Aghamohamadian 1996).

General Health Questionnaire (GHQ)

GHQ-28 was used to assess the mental health of students. This questionnaire is in the form of 60, 30, 28, 12 items. The 28-item questionnaire was developed to increase the variance and based on factors analysis on the original form, and it consists of four 7-item scales (physical symptoms, anxiety symptoms, social dysfunction, and depression) (Soltanian et al 2004). Different psychometric studies show that GHQ-28 has significant reliability and validity (Satchi, Kamkari, Asdgarian 2011).

Hooman studied standardization of the general health questionnaire on 751 B.S male and female students at Tarbiat Moalem University. The Cronbach's alpha coefficient, which indicates internal consistency, is 0.85 for physical symptoms, 0.87 for anxiety symptoms, 0.79 for social dysfunction, 0.91 for major depression symptoms, and 0.83 for the whole scale, which indicates general health, and the value of the test validity coefficient was 0.82. In another study, the retest reliability coefficient of the GHQ-28 was 0.55 in a time interval of 2–4 weeks. Retest reliability coefficient for each of the four subscales has been between 0.42 and 0.47 (Homan 1998).

Results
The following table shows the mean and standard deviation of dependent variables in the total sample in the pre-test and post-test.

| Variable       | Group   | Number | Mean  | Standard deviation |
|----------------|---------|--------|-------|--------------------|
| Social adjustment | Pretest | 15     | 26.70 | 9.91               |
|                | Posttest| 15     | 28.1  | 13.02              |
| General health | Pretest | 15     | 50.04 | 8.03               |
|                | Posttest| 15     | 53.1  | 11.09              |

Table 1 showed that the mean social adjustment in the pre-test was 36.70 and in the post-test of the whole sample, it was 28.1; the mean general health in the pre-test was 50.04, and in the post-test of the whole sample, it was 53.1.

| Tests              | Value | F ratio | Significance level (p) |
|--------------------|-------|---------|------------------------|
| Pillai’s trace     | 0.47  | 0.20    | 0.0001                 |
| Wilks’ Lambda      | 0.29  | 0.20    | 0.0001                 |
| Hotelling’s trace  | 4.22  | 0.20    | 0.0001                 |
| Roy’s largest root | 4.22  | 0.20    | 0.0001                 |

1. Stress management training affects students' social adjustment.

| Group       | Number | Df | F    | P     |
|-------------|--------|----|------|-------|
| Control     | 15     | 1  | 7.39 | 0.0001|
| Test        | 15     |    |      |       |

According to Table 3, the stress management has been effective on social adjustment given that the P value is less than 0.05.

2. Stress management training affects students' general health.
Table 4
MANCOVA test results on the effectiveness of stress management on general health

| Group    | Number | Df | F    | P     |
|----------|--------|----|------|-------|
| Control  | 15     | 1  | 5.32 | 0.0001|
| Test     | 15     |    |      |       |

According to Table 3, the stress management has been effective on general health given that the P value is less than 0.05.

**Discussion And Conclusion**

The current study aimed to investigate the effectiveness of stress management on social adjustment and the general health of patients with diabetes in Ahwaz. The results of this study indicated the effectiveness of cognitive-behavioral stress management on increasing social adjustment in the post-test stage. This study was consistent with the results of (Greenstein et al. 2003), (Eniola 2007), (Feghhi, Sa'adat Joo, Dastjordy 2014), (Khoshravesh, et al 2015), (Torabi, Mandemi, Garami Zade 2015), (Shufer, Shooben 2007) believe that adjustment is the tendency of an organism to change its ability to adapt to the environment, which is a response to environmental changes. Also, Brown considers social adjustment as a process by which the relationships among individuals, cultural groups and elements are satisfactory. In other words, relations between individuals and groups are established to provide their mutual satisfaction. Accordingly, it can be said that if people communicate with others, adapt to others and the environment, they will feel internal satisfaction and thus have mental health. Therefore, the subjects could find some of their weaknesses by thinking about their characteristics and tried to correct them. Relying on the strengths and replacing undesirable cognitive deviations with the correct logical thoughts, they tried to improve their thoughts, feelings, and emotions with others.

The results of this study indicated the effectiveness of cognitive-behavioral stress management on improving mental health in the post-test stage. This research has been consistent with the results of (Loo 1994), (Halamanzariz, Power 1999), (Hardin et al. 2002), (Nilan 2002), (Anjola, Bosari 2009), (Michelle, et al 2009), (Pourkazem, Bagherian, Adibi 2008). In explaining the effectiveness of the stress management training program on the health of the study group, it is essential to study the educational content of the intervention program. Stress is an important factor both during and after the disease. Stress and tensions increase in the course of the illness and make disease-related problems more remarkable. Cognitive skills training, such as problem-solving, fighting against negative thoughts, logical thinking and distraction techniques, increases mental health and behavioral skills training such as relaxation, activity planning, and enjoyable activities, increases physical health. This process leads to an increase in mental, physical and general health. Patients find out their problems with stress management training and learn strategies to cope with these problems.
This issue increases self-esteem and psychological adequacy in them. That is, people with diabetes can better apply their abilities and capacities and become more resistant to stress, which ultimately leads to an increase in their general health. Given the economic, social and psychological burden that is imposed on individuals, families, and society by diabetes, the results of this study are promising for diabetic patients, diabetes and mental health specialists. The results of this research create the opportunity for clinicians in applying interventions with a specific training package for diabetic people with psychological problems. Therefore, applying effective psychological interventions, they improve adjustment with this chronic disease as well as adherence to therapeutic recommendations and thus help prevent complications of diabetes and take an effective step in improving the physical and mental health of these patients. According to the results of the studies, it can be concluded that the cognitive-behavioral stress management is an effective program in reducing stress and can be used as a tool for effective adjustment to reduce the complications and diseases caused by stress. One of the limitations of this research was that the research was carried out on medical students, so its generalization is not possible for school students. It is recommended that several other test methods (such as questionnaires, practical tests) and different populations and ages be used in future studies to complement the information.

Conclusion

Finally, the results of this study showed that stress management has an impact on social adjustment and general health of patients with diabetes. Accordingly, the results of this study will provide the opportunity for clinicians to arrange special training packages for those with psychological problems, and to use the effective psychological interventions to adapt to the disease as well as adherence to therapeutic recommendations, thereby helping to prevent complications of diabetes and taking effective steps to increase the physical and mental health of these patients.

Declarations

Acknowledgments

We would thank all the colleagues and patients who helped us with this research.

Funding

No financial support has been received from any organization for the present study.

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Contributions

The analysis of the above research was done with SPSS software.

All participants in this study signed an informed consent form. Individuals were completely satisfied to participate in the research and disseminate the research data.

Ethics approval and consent to participate

All authors are fully satisfied with the publication of this article.

Consent for publication

All research data are available.

Declaration of conflict interest

The author(s) declared no potential conflicts of interest concerning the research, authorship, and publication of this article.

Thanks to all the patients and the medical staff for participating in this research.

In this study, conscious consent was obtained from patients and all participants were informed that the research results would be published in the article after the study.

No funding has been received for this research and it has been done only at personal expense.

Abbreviations

GHQ
General Health Questionnaire
CBT
Cognitive Behavioral Therapy

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