

Comparison of Effectiveness of Self-Empowerment Through Educational Package and Workshop in Quality of Life of Diabetic Patients

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Abstract

Background: Diabetes mellitus, as a chronic disease, largely affects lifestyle and quality of life. Education could affect quality of life of diabetic patient, however the results of studies have shown traditional and modern methods of education have various effects.

Objectives: The aim of this study was to compare the effect of self-empowerment program through educational package and workshop on quality of life among diabetic patients.

Methods: This study was a randomized clinical trial. Diabetic patients referring to the diabetes center, affiliated to Urmia University of Medical Sciences, participated in this study. A sample of 40 subjects was selected and they were divided into two groups of 20. A two-part questionnaire was used to collect data. The first part related to demographic information and the second was to assess the quality of life of diabetic patients, using audit of diabetes - dependent quality of life questionnaire.

Results: The mean and standard deviation of life quality scores in the pre-intervention were 40/25 \pm 7/69 in the workshop group and 39/9 \pm 9/00 in the other group, while in the post-intervention, they were 46/00 \pm 7/56 and 48/50 \pm 5/56, respectively. There is no significant difference between the two groups before and after education in term of quality of life. However, a significant difference was observed in the scores of quality of life before and after the intervention between the two groups.

Conclusions: Based on these findings, the use of self-empowerment regardless of the education program tools (workshop or training package), can promote self-care skills and thus improve the quality of life in diabetic patients.

Keywords: Self - Empowerment, Educational Package, Workshop, Quality of Life, Diabetes

1. Background

As a chronic disease, diabetes mellitus is one of the major public health problems. It involves 2 to 5 percent of adults in industrialized societies (1). The prevalence rate of diabetes among adults in the East Mediterranean region is 14.5 percent, although the rate is 7.7 percent in Iran. The world health organization has estimated 2 million people had been suffered from type 2 diabetes in Iran in 2000, which has been projected to reach 6.4 million in 2030 (2). The cost of diabetes in the world was \$ 232 billion in 2007 and is forecast to reach \$ 302 billion in 2025 (3). Direct cost of diabetes in Iran is 226 billion Rials annually (4). Although this chronic disease is not fatal, it can cause permanent disability (5) or serious complications such as blindness, lower limb amputation, and kidney and heart

diseases (6). As many chronic diseases, diabetes also requires daily treatment for life long, hence it significant affects the quality of life (7). Due to increasing prevalence of diabetes and high costs, effective interventions to control symptoms of the disease and quality of life of patients seems to be necessary (8). At the same time, enhancement of treatment methods and technologies, prolonging the lives of chronic patients without full recovery, and caring the quality of life of chronic patients are of particular importance. Chronic and disabling conditions largely affect the ability of the patient and daily activities (9). As previously mentioned, as a chronic disease, diabetes can influence remarkably patients' lifestyle and quality of life and patient rehabilitation program is necessary for following up the diabetes complications such as cardiovascular disease, peripheral neuropathy, retinopathy, nephropathy,

etc. Roberta et al. (9) suggested diabetic patients are at greater risk of getting social isolation, family and social roles collapse, and low quality of life. Studies have shown that proper management of diabetes by the patient had a major role in the prevention of complications (10). Debaty states that patients' involvement is essential for successful treatment (7). Thus, one of the most important activities to control the disease is training program, as an integral part of diabetes management (11). There are two common models for patient education in literature: medical-based education and patient-based training (12). With respect to assumptions of two models, the first is a plan for passive, dependent patient, while the second emphasizes the concepts such as independence, participation, patient's empowerment, and collaborative care (13). Diabetes is a self-management disease, because usually more than 95% of a patient's daily care must be provided by himself/herself (14). There is an unanimity that diabetics should be trained to understand how to take care of themselves. To this end, not only knowledge, but also an individual's ability to manage the disease are required (15). Traditional educational programs and routine care of patients with chronic diseases such as diabetes mellitus have not been very effective (16). Challenges that diabetic patients faced with have lead researchers to revise traditional models of health care and suggest empowerment models as suitable choices (17). Since 1989, self-empowerment, as a way of learning, has been used in the medical and nursing texts to care diabetic patients. Self-empowerment, that self-management is the main pillar of, enables patients to make informed decisions and plays an active role in the planning and decision-making in health-related activities; it is affected by emotions, thoughts, values, goals, and other psychological aspects of social life (18).

Empowerment programs used to increase awareness, knowledge, motivation, and ability have led to improvements in health and quality of life. It is a practical tool that develops and enhances knowledge and skills and applies strategies to promote community health as ultimate goal. Empowerment is a process through which individuals get greater control over decisions and practices that are effective in their health and lifestyle (19). The program is a collaborative approach toward diabetic patients care and education. Education keeps patients healthy and reduces disease-related complications (18). Usually, workshop is the dominant method for training patients; however, as technology advances, we can use technological advances to effectively train patients with chronic diseases such as diabetes.

2. Objectives

Due to the lack of research in this area, the study aimed to compare the effect of self-empowerment program through educational package and workshop on quality of life in diabetic patients.

3. Methods

This study was a randomized clinical trial, in which the effect of self-empowerment program on quality of life of diabetic patients was assessed through educational package and workshop. This study was conducted on 40 diabetic patients who referred to the diabetes center of Urmia University of Medical Sciences.

$$\frac{\left(Z_{1-\frac{\alpha}{2}} + Z_{1-\beta}\right)^2 (S_1^2 + S_2^2)}{(\bar{X} - \bar{X})^2} \quad (1)$$

The Inclusion criteria were: aged 30 - 70, a current diagnosis or history of diabetes, consciousness, and communication ability. The samples were called and invited to the study. Any subject that was not interested in the study or he/she had emotional problems was excluded. Samples were randomly assigned to two groups of 20. One group was educated by means of educational package and the other group in a workshop. A two-part self-report questionnaire was used to collect data. The first part related to demographic information including age, sex, education, height, weight, type of diabetes, and type of treatment. The second part included Audit of diabetes - dependent quality of life (ADDQOL) questionnaire designed by Bradley and colleagues in 1999. This self-report scale is consisted of 13 items measuring the aspects of QOL. These include career opportunities, Journeys, family relationships, friendship, sex life, recreational opportunities, social life, personal concerns about the future, concerns about the future of a family member or friend, physical activities, motivation to achieve things, extent to which people would fuss, and eating enjoyment (16).

This scale is scored based on a Likert Scale in which, +9 score is allocated to the response "much worse" and -9 to "much better". For being intelligible in Persian version, each item of the scale scored 1 to 7, so that "much worse" scored 7, and "much better" scored 1. We used content validity to determine the scale validity. To achieve this purpose, after translation, the questionnaire was given to 10 faculty members of Urmia University of Medical Sciences and revised after returning. Cronbach alpha coefficient was used to determine the scale reliability. It was determined as 89%. The questionnaire was completed by patients before intervention. In the workshop group, a summary of the meetings, sessions, and the main objective of

educational program was provided. The package training group was explained how to use the Tool kit. For the workshop group, 5 sessions were held for small groups of 5 people during 90 minutes with educational content aiming at promotion of activities of daily living, improving the ability to overcome obstacles to diabetes management, and familiarity with the principles and objectives of weight control, nutrition, exercise and, ultimately, increasing the motivation, decision making and proper stress management. Questionnaires were again completed by the participants two months after the last session. After collecting and coding, the data were analyzed by the statistical software SPSS 13. After testing for normality of data, parametric or non-parametric statistical tests were used (chi-square, Mann-Whitney U, and Wilcoxon tests).

The present study was approved by the ethics committee of Urmia University of Medical Sciences, Urmia, Iran. This study was conducted after obtaining an informed consent from all subjects participating in the study.

4. Results

The mean age in the sample was 56.87 ± 8.35 . Most participants (52.5%) were female, with type II diabetes (72.5%), and primary or secondary education (45%). Activity disturbance in 30% of patients was at high-level, and knowledge of most subjects about diabetes and its treatment was low (42.5%). Adjustment with diabetes in most subjects (35%) was low and most patients had no problem in asking their physician about diabetes (57.5%). None of the participants had previously participated in an empowerment workshop (Table 1).

The mean and standard deviation of quality of life score in the pre-intervention stage was 40.25 ± 7.69 in the workshop group and 39.9 ± 9.00 in the other group, while in the post intervention they were 46.00 ± 7.56 and 48.50 ± 5.56 , respectively. There was no significant difference between workshop-trained group and package-trained group before education in terms of quality of life. Also, there was no significant difference between the groups after education, using Mann-Whitney U test (Table 2).

However, there was a significant difference between the score of quality of life before the intervention and that of after the intervention in both groups, using Wilcoxon test (Table 3).

5. Discussion

The results showed that both methods of performing self-empowerment training program enhanced the quality of life of patients so that the studied groups showed

no statistically significant difference after the education. Hence, it implies almost the same positive effect of both interventions on the empowerment of patients. Anderson and colleagues also suggest that empowerment programs improve the quality of life among diabetic patients, implying a significant positive effect. Gibson et al. (20) have noted empowerment programs improve the quality of life of diabetic patients, especially the dimension of physical health. According to Tankov and colleagues, training can result in the improvement of metabolic control in diabetic patients treated with insulin as well as quality of life, especially in the sense of well-being, anxiety, and depression, after one or two years (21). Pibernic et al. (22) stated there are two important ways to improve patients' health and quality of life, the first is acquiring skills in diabetes and the second is psychosocial skills leading to better self-care and quality of life. They showed that quality of life of participants in an empowerment program increased after 3 months, while it did not significantly improve in the control group. They noted that the empowerment program provides patients with psychosocial skills and consequently, improved the quality of life. Ghanbary et al. (5) suggested education can improve the quality of life of diabetic patients and increase it to a high level. Providing diabetic patients with care and education causes joyful feeling, better communication, and more satisfaction with treatment procedure. Aghamolaei et al. (23) suggested a significant increase in awareness, physical, and mental aspects of quality of life after intervention.

Anderson and colleagues suggested empowerment programs for patients because engaging in self-care programs changed their attitudes and self-efficacy and thus improved the quality of life of patients. According to Debaty and colleagues, such training program could lead to the reduction of serum levels of HbA1c and improvement of quality of life among diabetic patients 6 months and one year after intervention (16). Baghianimoghdam et al. (24) also found that group training to empower diabetics improves the quality of life in these patients. Chaveepojnkamjorn et al. (25) suggested that an educational intervention lead to the improved patient knowledge about diabetes, motivation, self-monitoring, teamwork, physical skills to perform their works, and thus it promoted the quality of life. Forlani et al. (26) also suggested QOL of diabetic patients increased after attending an empowering program. Kargar Jahrom et al. (27) study showed empowerment programs can cause improvements in quality of life in diabetic patients. Bektas et al. study showed training improves quality of life, well-being, and emotional intelligence in patients; even after 6 months, well-being and emotional intelligence was still at a good level (28). Jahromi et al. considered a significant role for education in

Table 1. Demographic Variables as Relative and Absolute Frequency

Group / Variables	Workshop		Package		Statistics	P Value
	Frequency	Percent	Frequency	Percent		
Age	58.80 ± 7.81		54.95 ± 8.61		t = -1.48	0.147
Weight	71.55 ± 13.36		78.50 ± 16.75		t = -1.33	0.124
Height	161.10 ± 8.29		165 ± 10.06		t = -1.45	0.189
Duration of disease	11.8 ± 7.27		8.45 ± 6.87		t = -1.49	0.143
Gender					$\chi^2 = 2/50$	0/113
Male	7	35	12	60		
Female	13	65	8	40		
Education level					$\chi^2 = 8/00$	0/056
Illiterate	5	25	0	0		
Primary	8	40	6	30		
High school	4	20	10	50		
Academic	3	15	4	20		
Pills therapy(at present)					$\chi^2 = 4/44$	0/106
Yes	20	100	16	80		
No	0	0	4	20		
Insulin therapy at diabetes onset					$\chi^2 = 0/00$	1
Yes	7	35	7	35		
No	13	65	13	65		
Insulin therapy(at present)					$\chi^2 = 1/61$	0/204
Yes	13	65	9	45		
No	7	35	11	55		
Types of diabetes					$\chi^2 = 1/12$	0/288
Type 1	7	35	4	20		
Type 2	13	65	16	80		

enhancing the quality of life among patients participating in their study (29). Kate et al. showed, in comparison with a control group, participants in the program showed significant differences in health behaviors (e.g., exercise, cognitive symptom control, and communication with physicians) as well as in self-care and health status (such as fatigue, pain, function, and depression) (30).

5.1. Conclusion

Based on these findings, the use of self-empowerment regardless of the type of training program (workshop or training packages), can promote self-care skills and thus improve the quality of life among patients with diabetes. Due to the positive feedbacks of virtual methods in educating patients with diabetes, in case of lack of opportunity to hold workshops and in order to save the costs, training

these patients can be achieved through indirect methods such as using training packages.

This study faced some limitations. One of the limitations of this study was that only one-stage follow-up was performed after training. Therefore, it is recommended to conduct a research with prolonged follow-up to evaluate the effects of educational package over time. Another limitation related to the fact that the study was conducted on patients referring to one diabetes center which reduces the generalizability of the results.

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Table 2. Quality of Life in the Pre- and Post- Education Stages

Group	Variables	Workshop (mean ± SD)	Package (mean ± SD)	P Value	Z
QOL (13 - 91)	Before	40.25 ± 7.69	39.9 ± 9	0.989	- 0.014
QOL (13 - 91)	After	46 ± 7.56	48.5 ± 5.56	0.350	- 0.935

Table 3. Comparison of Quality of Life Between Pre- and Post- Education Stages

Group	Workshop		P Value	Z	Package		P Value	Z
	Before	After			Before	After		
QOL (13 - 91)	40.25 ± 7.69	46 ± 4.56	< 0.0001	- 3.93	39.9 ± 9	48.50 ± 5.56	< 0.0001	- 3.72

Footnote

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