

**EVALUATION AND COMPARISON OF THE EFFECT OF TWO EDUCATIONAL METHODS OF SELF-EMPOWERMENT TRAINING ON THE QUALITY OF LIFE IN DIABETIC PATIENTS VISITING THE DIABETES CLINIC OF URMIA OF MEDICAL SCIENCES**

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**Abstract.** Background and objective: Diabetes mellitus is one of the common chronic diseases with many complications and one of the serious challenges for the health system that affects on the quality of patient's life. Training patient is one of the oldest and best ways to control these complications. Traditional and modern education methods have shown different results on the quality of life of these patients which is remarkable. The present study was conducted aimed to compare the effect of self-empowerment training through educational package and workshop on the effect of quality of diabetic patients' life who visit the Diabetes Clinic in the Urmia University of Medical Sciences in 2013. Materials and methods: The present study is an experimental study with pretest-posttest which was carried out on 40 individuals of diabetic patients visiting the Diabetes Clinic in the Urmia University of Medical Sciences. The research samples were randomly assigned to the training workshop and training package. A two-part tool was used to collect data which included demographic information and the questionnaire of life quality of diabetic patients. After collecting data and coding them in the statistic software of SPSS (ver. 16), data were analyzed using Chi-square, U-Mann-Whitney and Wilcoxon statistical tests.

Results: The mean scores of life quality of research samples in the intervention group with training workshop were  $40.25 \pm 7.69$  and  $46.00 \pm 7.56$  before and after training, respectively and  $48.5 \pm 5.56$  and  $39.9 \pm 9.00$  in the intervention group with training package, respectively. The research findings showed no significant difference in the scores of life quality between two intended groups before and after intervention ( $P: 0.570$ ), but a significant difference was found before and after intervention (inter-group) in the scores of life quality in each group ( $P < 0.0001$ ).

Discussion and conclusion: The present study showed that the indirect educational method such as using the training packages is useful and effective in increasing the life quality score as well as the direct educational method such as training workshop and in cases where it is not possible to hold workshops for the patients with diabetes, it can be used as an effective educational method for improving the quality of life in diabetic patients.

**Keywords:** Diabetes, empowerment, diabetes education.

## 1. INTRODUCCIÓN

Diabetes mellitus, as a chronic disease, is one of the main problems of public health that involves about 2 to 5% of adults in industrial societies (Atak N et al., 2008). Today, more than 380 million people in the world have diabetes and it is anticipated that this number will increase to more than 600 million people in 2035 (Prevalence of Diabetes in the World, 2013). The prevalence of diabetes in the United States is estimated about 29.1 million people or 9.3% of total population in 2012 (Alex, 2016). The number of diabetic patients (20-79 years old) in Iran is around 5 million people according to the estimation of International Federation of Diabetes which its prevalence is 8.5%.

The mortality due to diabetes is about 37.075 people per year. The cost for each patient with diabetes is estimated 636 USD (International Diabetes, 2016). Although this chronic disease is not fatal but it is able to create permanent disabilities (Ghanbary A, 2002) and can lead to severe complications such as blindness, lower limb amputation and renal and cardiac diseases (Dowd MCJ et al. 2007). According to the increasing prevalence and being costly of diabetes, implementation of effective interventions is essential for the control of complications and the quality of patients' lives (Fauci AS et al., 2008). By improving therapies and technology and increased lifespan and lack of complete recovery of patients with chronic diseases, the quality of life in patients with chronic disease has a great importance. Chronic and disabling conditions have a wide effect on the personal ability and daily activities of these patients which affect on the individual's ability in his/her life in turn (Olson R , 2003). Diabetes mellitus, as a chronic disease, is effective on life style and life quality of the patients. Diabetes complications such as renal cardiac diseases, peripheral neuropathy, retinopathy, nephropathy and etc. causes the patients enter to rehabilitation programs (Roberto K et al., 2005). Roberto et al. (2005) write: diabetic patients are exposed to a higher risk of social isolation, disruption of family-social roles and reducing the quality of life (Roberto K et al., 2005). Different studies have shown that the correct management of diabetes by diabetic patients has had a basic role in preventing complications of this disease. One of the important activities in the control of this disease is educational programs especially training programs of empowerment (Zamanzadeh V et al.,

2008). Self-empowerment as an educational program is applied in different texts of medicine and nursing about the care of diabetic patients. Self-empowerment training is considered as the main pillar to achieve the goals in self-empowerment program that makes the patients able for conscious decision-making and playing an active role in programming and decision-making in the relevant activities to health (Anderson RM et al., 1995).

Empowerment program for increasing consciousness, knowledge, motivation and empowerment leads to improvement of health and quality of life. Personal empowerment program, is an applicable tool that causes growth and improvement of knowledge and skills of people and using its strategies is an obvious ideal for improving health of the communities. Personal empowerment is a process that individuals will have more control on decision-makings, life style and effective activities on their health through them (Karimy M, 2011). This program is a collaborative approach in the care of diabetes and training patients. Training patients cause continuous health and reducing complication of the disease (Anderson RM et al., 1995).

The dominant educational method to diabetic patients is using training workshops which has some problems such as difficult bringing people together, the high costs of handling a workshop and difficult accessing to a expert teacher, but with the increasing advances in technology specially about educational methods, these developed technologies can be used in order to effective training of patients with chronic diseases such as diabetes. According to the lack of study in the field of the present study is conducted aimed to compare the effect of educating self-empowerment program through the training package and workshop on the life quality of diabetic patients who visit the Diabetes Clinic of Urmia University of Medical Sciences.

## 2. MATERIALS AND METHODS

The present study is an experimental study with pretest-posttest that the effect of two different educational methods of self-empowerment through the training package and workshop on the life quality of diabetic patients visiting the Diabetes Clinic of Urmia University of Medical Sciences in 2013, is evaluated in it. According to Zamanzadeh study, a total number of 40 individuals was estimated as the sample size (Zamanzadeh V et al.,

2008).whom assigned to two 20 individuals groups using the table of random numbers. In order to sampling, names and recorded telephone numbers of all people visited the educational center of diabetes were taken and then, the list of people eligible to participate in this study was extracted and entered to the study after coding. The entry criteria included age between 30 to 70 years old, the recent diagnosis or previous history of diabetes, being conscious and able to communicate. Calling was used to invite samples. In case of the lack of person's willingness to attend in training sessions and or having mental problems, the intended sample was removed and another one was invited. The selected people for participating in this research were completely free and in case of lack of desire, they could refuse to accept it. The confidentiality principle of data was observed in all stages and a code was considered for each participant. A two-part tool was used to collect data. The first part was included demographic and disease information including age, sex, education level, height, weight, type of diabetes, type of treatment and the second part was related to the questionnaire of life quality of diabetic patients that the life quality assessment tool which was specific for diabetic patients and had been developed by Bradly et al. in 1999, was used. This tool contain 13 phrases that each one evaluates one aspect of life quality of diabetic patients. These aspects include (occupational status, travels, family relationships, relationships with friends, sexual relationships, entertainment, social life, concern about the future, concern about the future of the family and relatives, activities, motivation, criticism, pleasure from eating) (Bradley C et al., 1999).

Categorizing the Likert scale in the main questionnaire is considered as follows that the score +9 and -9 have been determined for the responses "was much worse than now" and "was much better than now", respectively. To remove the positive and negative signs and better understanding of people from the Persian questionnaire of scales, 1 to 7 was considered in each phrase and for the responses "was much worse than now" and "was much better than now", the score 7 and 1 were considered, respectively. To determine the validity of the tool, the content validation method was used. For this purpose and after translating this questionnaire to Persian, the mentioned questionnaire was given to 10 faculty members of Urmia University of Medical Sciences in Nursing and Endocrine Department and after receiving the comments, the necessary corrections were made. To determine the reliability of the tool,

Alpha Cronbach's correlation coefficient was used which was completed by 15 diabetic patients and the tool reliability was determined higher than 89%. The selected patients were excluded from the study to determine the reliability of the tool. Before the beginning of intervention, the empowerment questionnaire was completed by patients. In the group using the workshop, a summary of how to hold meeting, number of sessions and the main purpose of the educational program was presented and how to use the training package was explained in the group of training package. For the training workshop, 5 sessions of 1:30 hours were implemented as training in the small 5-people groups with methods of improving the daily activities of life, improving ability to overcome the managing obstacles of the disease and familiarity with the principles and the objectives of weight control, nutrition, exercise and finally the strategies of increasing motivation, power of decision-making and suitable management of stress and in the group of training package, a multimedia CD provided by the researcher and with a same content was given to the participants. Two months after the end of sessions, the mentioned questionnaires were completed by the participants, again. After collecting data and coding them in the statistic software of SPSS (ver. 16), data were analyzed. Topics such as frequency, mean and standard deviation were expressed by descriptive statistics. After evaluation of the normality of distribution of the scores derived from the questions, parametric or nonparametric statistics tests were used (Chi-square, U-Mann-Whitney and Wilcoxon).

### 3. RESULTS

The mean age of research samples was  $56.87 \pm 8.35$ . Most of research samples (52.5%) were female, with diabetes type II (72.5%) and elementary and middle education (45%). The disruption in the activity of most patients (30%) was high, the familiarity rate of most samples with diabetes and its treatment was low (42.5%). The power to establish proportion between diabetes and the life in (35%) of research samples was low and most patients felt completely free for asking question about diabetes from their physician (57.5%). None of the participants in the research had participated in empowerment workshop, before (table 1). The mean and standard deviation of life quality in the research samples were  $40.25 \pm 7.69$ ,  $39.9 \pm 9.00$  before intervention and  $46.00 \pm 7.56$  and  $48.50 \pm 5.56$  after intervention in the training workshop and package, respectively. Mann-Whitney statistical test showed no significant difference between two

educational groups before and after training (table 2). Nonparametric Wilcoxon test showed a significant difference in the scores of life quality before and after intervention between the diabetic patients in training package and workshops groups (table 3).

Table 1. Absolute and relative frequency of demographic and disease-related variables by training groups

Group Evaluated variable	Training workshop		Training package		Statistics	P value	
	Number	%	Number	%			
Age (years)	58.80±7.81		54.95±8.61		t:-1.48	0.147	
Weight (kg)	71.55±13.36		78.50±16.45		t:-1.33	0.124	
Height (cm)	161.10±8.29		165.0±10.06		t:-1.45	0.189	
Duration of diabetes (years)	11.80±7.27		8.45±6.87		t:-1.49	0.143	
Sex	Male	7	35	12	60	X2: 2.50	0.113
	Female	13	65	8	40		
Education	illiterate	5	25	0	0	X2:8.00	0.056
	Elementary and middle	8	40	6	30		
	High school	4	20	10	50		
	University	3	10	4	20		
Taking pills (now)	Yes	20	100	16	80	X2: 4.44	0.106
	No	0	0	4	20		
Taking insulin (from the beginning of diabetes)	Yes	7	35	7	35	X2: 0.00	1
	No	13	65	13	65		
Taking insulin (now)	Yes	13	80	9	45	X2: 1.61	0.204
	No	7	65	11	55		
Type of diabetes	Insulin dependent	7	35	4	20	X2: 1.12	0.288
	Insulin free	13	65	16	80		

Table 2. The comparison of life quality of diabetic patients in two educational groups before and after intervention (intergroup)

Group		Workshop	Training package	P value	Z
Variable		M±SD	M±SD		
Quality of life (13- 91)	Before training	40.25±7.69	39.9±9.00	0.989	-0.014
	After training	46.00±7.56	48.50±5.56		

Table 3. The comparison of life quality of the research samples before and after intervention in each training group (intergroup)

Variable		M±SD	P value	Z
Training group				
Workshop	Before	40.25±7.69	<0.0001	-3.93
	After	46.00±7.56		
Training package	Before	39.9±9.00	<0.0001	-3.72
	After	48.5±5.56		

## DISCUSSION AND CONCLUSION

Results of the present study showed that participating in both educational programs of self-empowerment has led to improve the life quality of diabetic patients in both groups after intervention but there is no significant difference between two groups after intervention that can be due to the positive effect which is almost the same in both empowerment intervention. Anderson et al. also indicate that empowerment programs have an important and positive effect on improving the life quality of diabetic patients (Anderson RM et al., 1995). Gibson et al. mention that empowerment programs cause the improvement of life quality of diabetic patients especially in the aspect of physical health (Gibson CH, 1991). Pibernick et al. said in this regard that two aspects are important for improving patient's health and the quality of his/her life. The first aspect is the skills that a person obtain in related to diabetes. The second aspect which is equal to the first one in terms of importance, includes social psychological skills which lead to improve the self-care plans and then the quality of patient's life following that. They showed that the life quality of participants in empowerment program has increased after three months, while the life quality of individuals in the control group showed no significant difference. They mentioned that the empowerment program lead to obtain social psychological skills that it causes improvement in the quality of patients' life (Pibernik-Okanovic M et al., 2004). Qanbari et al. stated in their study that the life quality of diabetic patients who trained can achieve to a desirable and high level from a low level. Providing care and education for diabetic patients causes feelings of vitality, better communication and more satisfaction of therapies (Ghanbary A, 2002). Agha Molaei et al. also mentioned in their research that there is a significant increase in consciousness and physical and mental aspects of life quality after educational intervention (Aghamolaei T et al., 2005). Baghiani Moqadam et al. showed that group education to empower diabetic patients can cause the improvement of life quality of the patients, as well (Baghianimoghadam MH et al., 2009). Chaveenpojnkamjorn et al. also indicated in their study that educational intervention causes the improvement of patients' knowledge about diabetes, increasing motivation, self-monitoring behaviors, group working, physical skills in doing works and improving the quality of patients' life as a result (Chaveenpojnkamjorn W et al., 2009). The quality of life in diabetic patients had been

increased after the educational program of empowerment in the study of Farlani et al. In the study of Heydari et al., the life quality of teenagers with diabetes had been increased after the implementation of empowerment program (Forlani G et al., 2006). Bektas Murat Yalcin et al. also indicated in their interventional study that training leads to improve the quality of life, being well and emotional intelligence of patients participating in this study. They also showed that even after 6 months, their emotional intelligence and being-well is still at an acceptable level (Yalcin BM et al., 2008). Jahromi et al. also shown in their study that education has an effective role in increasing the life quality of patients who participated in this research (Kargar Jahrom M et al., 2015). Kate et al. also showed in their study that participants in this educational program had a significant difference in health behaviors such as (activity, control of cognitive symptoms and relationship with a doctor), self-care and health status such as (fatigue, pain, function, depression) compared to the control group (Lorig KR et al., 2001).

According to the results of the present study, using the empowerment program except the training way (training workshop or training package) can improve self-care skills and the life quality of diabetic patients, as a result. Due to the effect of virtual methods in training patients with diabetes as much as workshops, we can use the indirect education methods like the training packages in case of lack of ability to hold training workshop and in order to save money in the costs of training courses for these patients.

The present study had some limitations such as lack of cooperation of some participants to the end of study and the necessity to remove them from the study and re-sampling. Also, due to the use of modern educational technologies and the necessity of using computer for education of samples through training package and or one of the carers close to the group of training package should be familiar with a computer and its using way.

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