



Investigating the Effect of Teacher Training Program on Understanding Teachers' Supportive Behaviors by Students with Diabetes

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ABSTRACT

Introduction: insufficient information of teachers on diabetes lead to emergence of many problems for pupils. Therefore, this research aimed to investigate the effect of teacher training program on perception of teachers' supportive behaviors by students with diabetes. Materials and Methods: this quasi-experimental study with a control group was done using pre and post control group in the city of Elam in 2016. The study population was composed of Ilam teachers who were randomly assigned into control and experimental groups. Data were collected using a researcher-built questionnaire. After holding three training sessions for teachers questionnaires were administered again. Data were analyzed using descriptive statistics (mean and standard deviation) and inferential statistics (independent t-test). Results: The results showed that before the intervention, no significant difference was found between supportive behaviors of experiment and control groups ($P > 0.05$). But after the intervention, the supportive behaviors of experimental group had a significant increase ($P < 0.05$). Conclusion: Considering the effectiveness of the implementation of these interventions on the increase of supportive behaviors, it is recommended to run this intervention to enhance the implementation of teachers' supportive behaviors.

Keywords: Supportive behaviors, teachers, diabetes

INTRODUCTION

Diabetes is a chronic and dangerous disease that is described through abnormalities in the metabolism of carbohydrates, proteins and fats. There are many symptoms of diabetes. A person with diabetes either does not produce insulin or does not respond it, resulting in hyperglycemia associated with both short-term and long-term complications of diabetes [1]. Diabetes mellitus is a chronic metabolic syndrome and the most common endocrine disorder in childhood and adolescence that occurs at any age, but the peak is between 10 and 15 years of age and 75 percent of cases are diagnosed before age 18 years [2, 3]. The most common type of diabetes in children is insulin-dependent diabetes mellitus or type 1 [4]. The most common age of onset of type 1 diabetes is in adolescence [5] and increase the number of adolescents with diabetes need accurate health-care programs in order to reduce the effects physician. The exact treatment of adolescents with type 1 diabetes often disrupt normal activities and requires patient-focused behaviors by adolescents and family and the potential impact on quality of life [6, 7]. Those children dealing with a chronic illness such as diabetes are at a high risk of emotional reactions and behavioral disorders. So that the disease followed by emotional disorders, prevent them from the achievement of developmental objectives in their adolescence. Interaction between teachers and students also play an important role in student academic achievement so that constant interaction and support can bring about important opportunities for adolescents' health promotion. Among such interactions of children are the relationship with friends, teachers and school authorities [8].

Social networks are variable in nature and accelerate interactions between individuals and health care organizations. Public communities, patients and health personnel use social networking to communicate and solve their health issues. In America, 62 percent of adults use Internet search and 39 percent use social networking sites like Facebook for looking for health information. In Europe, statistics show Facebook is the fourth most important source of health information. Today, social networks have a special place in people's lives. By formation of diverse online applications, the majority of people spend more than 20% of their time on social networks that is even higher among younger users. Various groups of society have adapted to these technologies and they use social networks increasingly to access health categories [9]. Since the advent of social networks, many researchers studied the use of them in educational issues. The researchers concluded that social networks reinforce group critical thinking, teamwork and project-based learning and group problem solving through web-based tools [10].

According to the researcher experiences, it was some times observed that due to insufficient information of teachers about diabetes, a student with diabetes is forced to drop school or in other cases hide the disease and this has caused many problems for him. Accordingly, the researcher decided that apart from holding training classes for teachers in relation to insulin-dependent diabetes, their questions are also responded through social networks. Moreover, previous studies have emphasized on the role of nurses in educating the patients [11-13] and a study on the impact of teachers' education on understanding of students with diabetes from teachers' supportive behaviors has not been done in Iran. Therefore, the researcher aimed to conduct a study under the title of understanding the effect of Teachers' Educational Program on Understanding Teachers' Supportive Behaviors by Students with Diabetes.

MATERIALS AND METHODS

This quasi-experimental study was conducted in 2016 in the city of Elam. The study population in this study was elementary school teachers at Elam. Inclusion criteria included residence in Elam, being in the range of 13 to 18 years old, passing at least six months after the diagnosis of type 1 diabetes, definitive diagnosis of insulin-dependent diabetes by an endocrinologist (type A), attending school, lack of speech and hearing problems, and lack of an advanced form of the vital organs illness and psychiatric disorders and chronic diseases other than diabetes, teachers' willingness and ability to join the social networks. Exclusion criteria included dropping out for any reason during the intervention, a stressful event such as parental divorce, death of a parent, brother or sister, and change the location of death during the study, that might affect the interest and tendency of the individual to participate and answer the questionnaire.

In this study, to select the students with diabetes easy sampling was used. The researcher referred to the record of type A diabetic patients and prepared a list of patients under clinic support, and then samples were selected by random sampling from among the aforementioned list and then randomly were assigned to (educational intervention) and control (no intervention) groups. Data collection was conducted through a questionnaire developed by the researchers. The questionnaire had three parts: the first part consisting of 12 questions included the demographic features of adolescents that describe age, gender, number of siblings in the family, educational status, age, educational level and parents' occupation and education and their school address. The second part contains information about the disease including four questions used to describe the current disease situation, including the age of onset of diabetes, duration of diabetes, insulin type and number of injections of insulin. Information on this part was filled only by the adolescent. The third part of the questionnaire consisted of 17 questions about students' understanding of teachers' supportive behaviors. Replies to the questionnaire had four options of always, often, sometimes, never, that were scored (zero, one, two and three); then the overall supportive behavior score as well as the different parts of it was calculated.

The highest score achieved in any part means that the understanding of that behavior is more. That is, scores higher than 25.5 indicate better supportive behaviors and in total a higher score means that supportive behavior of teachers is more.

to obtain the samples, the researcher with written permission from the School of Nursing and Midwifery at Isfahan University of Medical Sciences, referred Social Security Dey Clinic of Elam. After introducing herself and the research objective to the authorities, asked the clinic cooperation. In order to achieve the desired sample size, researcher continually referred to reception unit every day except Fridays, and after examining the records of all patients with type 1 diabetes, prepared a list of students with type 1 diabetes who were eligible to participate in the study and then randomly selected people and divided the two experimental and control groups randomly. Thus, in a box 35 sheets were written test group and 35 sheets control group, the researchers drew them one by one and read loud.

The first contact was made with student's primary care provider at the clinic call center and the room was that the clinic officer provided for the researcher. The aim and method of the study were explained to the caregiver, and it was noted that participants at every stage of research can leave the study if they want. At the introduction, the student and caregiver were welcomed and treated very friendly, the objective, method, and withdrawal were explained again; after obtaining the consent of the primary caregiver and student, the questionnaire of teachers' supportive behaviors was given to the student. To fill the 3-part questionnaire with 33 questions by the researcher, 30 minutes were required. Then using the addresses written by samples in the questionnaire, the researcher went to school. First, the reference form from the university was given to school principal and the researcher presented a full explanation about the purpose of this study. After the consent of the school principal, a meeting was hold for teachers by coordination of the principal where a full explanation of the nature and objectives of the study were presented to teachers. The teachers' informed consent was obtained, and three sessions a week of 1.5 hour education classes were coordinated with teachers. Research topics was presented in the training session by the help of a member of the Faculty of Nursing and Midwifery of Elam including: Physiology of insulin production in the body, pathophysiology of diabetes, difference between diabetes type one and two, blood sugar increase and decrease symptoms and ways to treat it (the first session), types of insulin and its differences with each other, the correct way of insulin injection, the principles of nutrition in diabetes type 2 (second session), diabetes and traveling, how to deal with students with diabetes in school, and diabetes and sports (third session). After the meeting _ teachers' cell phone number were taken to create an online social group of teachers to answer their questions. According to the time-taking nature of change of behavior, a month after the training session, the questionnaires were given to students at both intervention and control groups. For teachers in the control group diabetes education session was held after the end of the study.

The information in this study of adolescents with type I diabetes were collected in two stages. The two main variables were diabetes education program for teachers and students' understanding of the supportive behavior of teachers; the former was the independent variable and the latter is the dependent variable. And also confounding variables were also examined. To analyze the data, descriptive and inferential statistical methods and SPSS 16 was used in this study.

RESULTS

Table 1. Comparison mean supportive behaviors of teachers before and after the intervention

Group	Before intervention	Post intervention	P-value
	M(SD)	M(SD)	
Experimental	11.02(6.73)	10.44(3.92)	.0001
Control	10.66(3.92)	29.52(12.60)	

Results Table 1 shows the mean behavior before and after the intervention support groups was not significant relationships But after the intervention of supportive behaviors experimental group had a significant increase.

DISCUSSION

Promotion of children management behaviors have shown that by empowering the child, the child's performance in applying the principles of insulin therapy becomes more accurate; that is consistent with the study by Afshar et al [14]. In fact, self-care education to patients with diabetes leads to compliance with the insulin therapy and reduces the side effects of insulin injection including atrophy of injected area [14]. In a study by Heidari et al (2009) on the impact of the relationship between family support and glycemic control in diabetic patients showed that there is an adverse relationship between family support and HbA1c. The findings also showed that there was a significant relationship between family support, age, sex, marital status, family size and family structure [15] which is consistent with the results of this study.

The findings of this study showed that before intervention behavioral support of teachers was moderate which is consistent with previous studies. In a study in 2011-Italy to assess the needs of children with diabetes in school and the teachers' perceptions about their illness, it was found that that there is not enough knowledge about diabetes among school personnel, also no special law is defined for the protection of children with diabetes at school [16]. In a study in 2009 in Spain for investigation of the basic needs of children with diabetes at school from the views of teachers and parents, the obtained data showed that teachers of type 1 diabetes is low and most children in school need parental support [17]. Another study in 2015 in America as behavioral support of teachers and the perceptions of adolescents with diabetes of these supportive behaviors showed that students gave the lowest scores to teachers support about their disease and they believe the supportive behaviors are inadequate [18].

Results showed that conducting the training enhances students' understanding of teachers' supportive behaviors. In a study by Cheraghi *et al.* four sessions of group learning promoted the management of blood glucose in patients with diabetes [19]. Ahmadi *et al.* demonstrated that self-care education for patients with diabetes helps control the blood glucose at close to normal level or glycated hemoglobin levels and reduces the severity of neurological complications caused by diabetes [20].

According to Bekr, teachers in the school play different roles. For a better teaching and high quality learning, teachers can receive the necessary training and positive change in behavior, to effectively help students to enhance learning. In recent years with advances in technology, education is transferred from classrooms toward online classes and this causes significant changes in medical training. Social media have become a valid tool for education, especially when there is a correlation between clinical training and teaching [21].

CONCLUSION

Due to the impact of this program in order to increase teachers' supportive behaviors of children with diabetes, the implementation of these interventions for increasing the supportive behaviors for children with diabetes is recommended.

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