Evaluation of the educational practices in promoting self-management in type 2 diabetes mellitus*

EVALUATION OF THE EDUCATIONAL PRACTICES IN PROMOTING SELF-MANAGEMENT IN TYPE 2 DIABETES MELLITUS

EVALUACIÓN DE LAS ACCIONES EDUCATIVAS EN LA PROMOCIÓN DEL AUTOGERENCIAMIENTO DE LOS CUIDADOS EN DIABETES MELLITUS TIPO 2

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ABSTRACT

The objective of this is study to evaluate the educational practices in promoting the self-management of diabetes mellitus. Subjects were twenty-six individuals with type 2 diabetes, who participated in the educational program at a teaching hospital in Belo Horizonte, Minas Gerais. The subjects were followed for four months in 2008. The educational group practices consisted of three monthly meetings, in which recreational and interactive dynamics were performed, and individual sessions were held using dialogic education. The evaluation was performed using a specific questionnaire: self-care and clinical exams in the beginning and four months after the intervention. The mean age of the subjects was 60.9 ±8.4 years; the mean time of disease was 8.7±6.7 years; most (55.6% or 27 individuals) had incomplete primary education and a family income between 1 and 3 minimum salaries. Satisfactory results were found in the self-care test. It was also observed that HbA1c levels dropped down and the educational practices improved self-care and self-management of the disease.

DESCRIPTORS

Diabetes mellitus, type 2
Self care
Health education
Evaluation
Nursing

RESUMO

O estudo visa avaliar as ações educativas na promoção do autogerenciamento dos cuidados em diabetes mellitus. Vinte e sete indivíduos com diabetes tipo 2, atendidos no programa educativo do hospital-escola de Belo Horizonte, Minas Gerais, foram acompanhados durante quatro meses no ano de 2008. As ações educativas nos grupos consistiam de três encontros mensais, nos quais eram desenvolvidas dinâmicas lúdicas e interativas, e o atendimento individual realizado por meio da educação dialógica. A avaliação foi feita mediante questionário específico: autogerenciamento dos cuidados e exames clínicos no tempo inicial e após quatro meses da intervenção. Os indivíduos tinham idade média de 60,9 ±8,4 anos; o tempo médio da doença de 8,7±6,7 anos, tinham ensino fundamental incompleto e renda familiar de 1 a 3 salários mínimos 55, 6% (27). Os resultados foram satisfatórios no teste de autogerenciamento dos cuidados. Observou-se redução nos níveis de HbA1c e as ações educativas favoreceram o autocuidado e o autocontrole da doença.

DESCRITORES

Diabetes mellitus tipo 2
Autocuidado
Educação em saúde
Avaliação
Enfermagem

RESUMEN

Estudio que apunta a evaluar acciones educativas promotoras de autogerenciamiento de cuidados en diabetes mellitus. Veintisiete individuos con diabetes tipo 2, atendidos en programa educativo del hospital/escuela de Belo Horizonte-MG, fueron seguidos durante cuatro meses en el año 2008. Las acciones educativas en los grupos consistieron en tres encuentros mensuales, en los que se desarrollaban dinámicas lúdicas interactivas y la atención individual se realizaba mediante educación dialógica. Se evaluó mediante cuestionario específico: autogerenciamiento de cuidados y exámenes clínicos en momento inicial y después de cuatro meses de la intervención. La media etaria de los individuos era 60,9±8,4 años, tiempo medio de la enfermedad 8,7±6,7 años, con educación primaria incompleta y renta familiar de 1 a 3 salarios mínimos (55,6%=27 individuos). Los resultados fueron satisfactorios en el test de autogerenciamiento de cuidados. Se observó reducción en niveles de HbA1c y las acciones educativas favorecieron el autocuidado y autocontrol de la enfermedad.

DESCRIPTORES

Diabetes mellitus tipo 2
Autocuidado
Educación em salud
Evaluación
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INTRODUCTION

Diabetes Mellitus (DM) is a major health issue and is among the most frequent chronic disorders. The growing urbanization, unhealthy lifestyles, which include having high-fat diets and doing little exercise, obesity, and population aging are factors accounted for this growing tendency towards diabetes in the population, causing a high economical burden to the government to manage and treat the complications of the disease[1-4]. According to the Brazilian Ministry of Health (MH), 11% of the national population with more than 40 years of age (about 5 million people) has diabetes. This high incidence represents a considerable economic loss for the country, as it implies that individuals have productivity losses at work, and an early retirement, thus limiting their functional capacities[1-2].

The World Health Organization[2] acknowledges that individuals with diabetes must adopt self-care skills to manage their disease, and the better their access to information and knowledge about their condition, the better their skills to be competent in their actions, thus using measures to follow a healthy diet and exercises on a daily basis, which will have a direct effect on the improvement of their quality of life[5-7]. Continuous therapeutic education and effective support from health professionals are necessary to teach individuals the knowledge, skills, attitudes and motivation they need for self-care and self-management of the disease[5-7]. Nurses have an essential role in the health team, and assume health education as the main focus in their practice of pedagogical activities[3]. Some author[3-5] affirm that controlling and prevention diabetes complications is possible through educational programs and health professionals trained to work with education.

Based on education by Paulo Freire[5], we believe that an educational practice performed in a perspective that is dialogical, reflexive and analytical can be an effective tool to develop analytical knowledge that would broaden the individuals' understating about their autonomy regarding their health and life conditions, i.e. diabetes. The results of studies available in the literature have reinforced the importance of strategies promoting behavioral changes, including information, education and interpersonal communication (professional/individual) adapted to the objective, socio-cultural context and lifestyles of individuals with diabetes. In this perspective, it is necessary to promote a process to learn about the disease, the treatment options, risks and benefits of each of those strategies for administrators, health professionals and patients to decide about the everyday paths of the therapy[3-5].

Education for managing the disease or education in DM can be seen as a program of interventions structured to provide individuals with knowledge, attitude, and the necessary skills for: (a) performing self-care of the disease by controlling crises (hypoglycemia; hyperglycemia) and (b) making behavioral changes, especially regarding diet and exercise. The objective of this process is to prepare individuals to understand and become motivated to effectively participate in the everyday therapy[4]. Individuals who do not receive diabetes education have a strong tendency for increased risks of complications[8].

Diabetes education has involved multidisciplinary teams and nurses in educational activities held at Health Centers, Outpatient clinics and Hospitals, reinforcing the principles of knowledge for a healthy behavior. The education process should be associated with quality teaching, and should comply with the National Standards for Diabetes Self-Management Education), which establishes the basis for the care that all individuals with DM require to successfully achieve good health outcomes. This Standard establishes that every diabetes patient must receive: a) an evaluation of their educational needs; b) thorough guidance directed to their needs; c) an evaluation of the development of the education process to identify any deficiencies; and d) a report about their educational outcomes[9].

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Education targeted at DM prevention and management poses a challenge for patients and health professionals, as it aims to improve self-care, which is associated with healthy eating behaviors, exercising, and health promotion.

Considering that education is essential for the self-management of DM, the Endocrinology and Metabolism service at The Federal University of Minas Gerais teaching hospital (HC-UFMG) has developed, since 2001, a diabetes education program with the objective to promote better treatment adherence with a view to achieving disease management and improving patients' quality of life. The educational process is based on pedagogical actions, with the work of a multidisciplinary team, and individual nursing consultations, which have the objective to address themes related to the physiopathology of the disease, as well as the signs, symptoms and complications, in addition to the principles of following a diet and exercise program. In the individual consultation, the professional addressed the patient's expectations regarding their life and treatment, so as to promote education through the dialogical exchange. The educational process in groups is improved by using games, which besides being tools for communication, expression and learning, facilitate knowledge acquisition and intensify the exchanges[4,7].

OBJECTIVE

To evaluate the educational actions in promoting self-management of care, associated to diet, exercise, and blood glucose control in individuals with Type 2 diabetes mellitus, following an Education Program at a Teaching Hospital in Belo Horizonte, Minas Gerais.

METHOD

This observational study was performed with 27 individuals with Type 2 DM, of both genders and age between 46 and 70 years, who were being followed at an outpatient clinic at a reference hospital in Belo Horizonte (Minas Gerais), and enrolled in a diabetes education program in 2008. All the participants who provided written consent were instructed about the diabetes education study-program.

The participants were reached by phone calls, and individual appointments were made. Later they were forwarded to group sessions, stressing the importance of their participation in every step of the education process.

In the individual consultation participants were instructed about how to manage their diet and exercise program, their anthropometric measures were obtained (weight, height, and body mass index-BMI) and a glycated hemoglobin (HbA1c) test was performed. In the individual consultations, nurses had the role to welcome the patient, realize their perspective regarding the treatment and investigate the self-care practices, foot exams, instruct them about how to avoid acute and chronic complications of the disease and help them decide on the best was to improve their blood glucose level management.

Participants who attended individual sessions were also forwarded to group education. Three meetings were held, counting with the participation of 13 participants in the group, which lasted 2 hours. The nurse conducted the process in every session. In each meeting one or more health professionals introduced a topic using interactive and recreational dynamics, which were founded on educational cards and games based on theoretical and practical knowledge. The group meetings were performed always with the same multidisciplinary team and the teaching and learning methodologies were changed as much as possible. The DM topics addressed in the meetings were: physiopathology, preventing acute and chronic complications, importance of diet and exercise, and foot care. The health professionals (physician, nurse, physiotherapist, occupational therapist and nutritionist) were instructed about their posture, language and forms of communication. The group education consisted of nine meetings, and evaluations were made in the 1st and 9th meeting.

During the intervals of the educational process, the participants were motivated through phone calls, when they were informed and instructed about the need to manage their diet and exercise programs.

Data collection was performed in the initial time (T0), before the education activities were started, and shortly after completing the educational cycle (moment) in the four months (T4) following the education program. The variable of interest included: self-management (following diet and exercising), which was measured using the diabetes care self-management instrument (ESM)[7] consisting of, respectively, eight closed questions, self-answerable and anonymous, which were applied individually with the support from the nurse and nursing student. The ESM test has a total 8-point score. Patients must achieve a minimum score 4.0 to show they have changed their behavior.

The clinical indicators of metabolism management were: glycated hemoglobin (HbA1c) exam, which shows the mean blood glucose level during a three-month period, and anthropometrical measurements (weight, height, and BMI). Weight and height were measured using a digital scale (ModelPL150, Filizzola Ltda, Brazil) from the outpatient clinic.

To evaluate the results for hemoglobin A1c and BMI of the individual with type 2 DM, we used the parameters recommended by the Latin-American Diabetes Association[1]. The normal values according to that parameter are: hemoglobin A1c between 3.5% and 7.5%, and BMI ≤27 kg/m2 in men and ≤26 kg/m2 in women.

Statistical analysis was performed using SPSS V.16, Student's t and chi-square test (χ^2), considering a 5% level of significance.

The project was accepted by the Local Research Ethics Review Board (COEP-UFMG), under review number 157/07, and all participants provided written consent at the moment of the nursing consultation.

RESULTS

Fifty-seven individuals with DM were enrolled to participate in the individual and group education program, 27 of which attended the full four-month period. There was a loss of 30(47.4%) patients in the educational process (individual and group). Most patients reported they stopped attending the program because of economic and institutional reasons. After the study, these individuals were once again invited to participate in the diabetes education program. The characteristics of the individuals included in the study are listed in Table 1. It is observed that most individuals were women (77.8%) and had incomplete primary education (74.1%). The mean age of the individuals was 60.9 ± 8.4 years, and the family income was between 1 and 3 minimum salaries.

Table 1 – Characteristics of individuals with diabetes participating in the education program at a teaching hospital in Belo Horizonte, MG - 2008

	Beginning(n = 27)
Gender	
Female	21 (77.8%)
Male	6 (22.2%)
Education	
Illiterate	4 (14.8%)
Primary, incomplete	20 (74.1%)
Primary, complete	2 (7.4%)
Secondary, incomplete	1 (3.7%)
Age	60.9 ± 8.4
Family income (salary)	
1 or less	44.4%
1,1 to 3,0	55.6%
Time of disease (years)	8.7±6.7

Data presented as mean ± standard deviation or absolute frequency (relative).
Note: (n = 27)

Table 2 lists the results of weight, BMI, glycated hemoglobin and of the questionnaire on Self-management of Care in Diabetes for individuals who participated in the four-month education program at the hospital in 2008. It is observed there was a statistically significant increase in weight after the intervention (p=0.009). Consequently, there was also a significant increase in the BMI after intervention (p=0.012). There was no statistically significant change in glycated hemoglobin values and on the results of the questionnaire on diabetes self-care (p>0.05), though there was a reduction in glycated hemoglobin.

Table 2 – Clinical aspects of glycated hemoglobin and questionnaire score results of individuals with diabetes who participated in the education program at a teaching hospital in Belo Horizonte, MG - 2008

	Beginning (n = 27)	4 months (n = 27)	P
Weight(kg)	71.1 ± 13.2	73.0 ± 13.8	0.009
BMI (kg/m²)	27.3 ± 9.7	30.2 ± 6.0	0.012
Glycate hemoglobin - HbA1c (%)	8.1 ± 2.4	7.7 ± 1.8	0.266
Self-management of care (ESM)	3.4 ± 0.4	3.4 ± 0.5	0.943

Data presented as mean ± standard deviation.
Note: (n = 27)

DISCUSSION

The population of present study consisted of adults, mainly women (77.8%), in their 60s and with a low educational level. The age and low level of education can certainly limit the individuals' access to information, reducing their understanding of the instructions given by health professionals and, thus, increasing their difficulty to self-manage care and disease [9]. Some authors[6-9] add that individuals manage DM with they can count with knowledge, skills, attitudes and awareness required for self-care. Complementarily, some studies[10-12] state other factors are considered important mediators and moderators for the education in self-management of care, such as: education, personality, socioeconomic status, and social and cultural support.

It was observed that in the individual and group sessions, health professionals and patients valued the dialogic exchange they had, which also generated positive results in the promotion of self-management. Individual sessions permitted the professionals to get to know the patients, their worries, life habits, self-management practices and how to establish the education process. The instructions were provided according to each individual's needs, thus strengthening the educational activity. The participants' statements showed they were satisfied with their participation in the program. One important aspect that should be observed in the practice is the individual's autonomy, more than transferring knowledge, educators should make room for their audience to build their own perspectives[4-6].

The dynamics adopted in the group education sessions provided a strong encouragement for diabetes education, as they were interactive, valuing the participants' experience reports and permitting an integrating process, towards a better therapeutic management of the disease. By using games and appropriate language in the educational practice, the health professionals permitted patients to plan their meals better, keep their schedules and diet, besides exercising. Some study results confirm that the work of the multidisciplinary team in the teaching-learning process helps to make group work effective and increases socialization, thus, it also encourages the exchange of knowledge and experience. Therefore, the individuals' knowledge about the disease is improved and they become more aware and collaborate in the search for a healthy life with Diabetes[9-12].

The individuals pointed out the barriers they faced to keep on a diet and exercise, which included the lack of family support, stress, work or occupation, safety and the cost of places to exercise. Individuals facing numerous barriers tend to engage less often in the treatment regime. To combat those barriers and achieve results that help the self-management of care, health professionals should provide continuous education and support, aiming to improve disease management[4].

Diabetes education is therefore credited as a problematization process about life and health conditions, promoting individual, collective and institutional changes with a view to change the reality. It is one of the most important long-term investments, considering that the health costs of individuals with diabetes and the social burden due to the complication of the disease are excessive[1-3]. There is evidence that the interaction between the health profes-

sional and the individual with diabetes can encourage a dialogue that promotes behavioral changes, provided it occurs using adequate language in that cultural context. The attitude of listening, and the group reflections on the experiences, statements and perceptions are essential to deepen the dialogue about the needs and demands of an interaction process to improve self-care[12-14].

Some studies[3-4] suggest that health professionals should learn more about the process and outcomes of diabetes educations in order to improve their observation, registering and description of how the program has affected the health of those individuals, which would permit the replication or application in educational practice.

It is possible that the generalization of the study is possible mostly because of the chosen theoretical-methodological framework, which, in this case, is centered on a dialogic and reflexive educational practice, with the inclusion of other knowledge and skills in addition to the technical and normative knowledge of health professionals. Therefore, not only did the study contribute improve the self-management of care, but, potentially, collaborated to reflect on educational programs and the practice of health professionals in the public health area. The study limitations were the small number of participants, the short follow up time of the educational process, and the abandonment of the program.

In summary, the educational activities to promote self-care helps participants change the disease management behaviors they learnt during the four months of the program.

CONCLUSION

This study collaborated to advance knowledge in diabetes and educational strategy evaluation, with a view to learn about their effects on the disease and on the self-management of care. Furthermore, it permits to discuss on the possible limitations and options of improving the health education process associated to diabetes programs.

Educational practice appears as a better way to raise awareness in individuals with diabetes about the importance of self-care. It is a moment in which the individual and health professionals talk about all the information about the disease and treatment.

Nurses have a key role in educational practice. Besides being their area of expertise, they bond to the patients through the nursing consultation, making the approach easier and direct. The group activities, besides being informational, are also considered important moments to exchange experiences and support, and are moments of relaxation and leisure. Education for self-care is no easy task, because it depends not only on the technical competence of the professional, but also on the will and interest of patients. If patients fail to comply with the educational practice, and consequently with the treatment, self-care becomes difficult and blood glucose management is harmed.

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