

# Health education in the care to clients of the Blood Glucose Self-Monitoring Program\*

A EDUCAÇÃO EM SAÚDE NO CUIDADO DE USUÁRIOS DO PROGRAMA AUTOMONITORAMENTO GLICÊMICO

LA EDUCACIÓN EN SALUD EN EL CUIDADO DE PACIENTES DEL PROGRAMA AUTOMONITOREO GLUCÉMICO

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## ABSTRACT

This article reports, in a systemized and analytical way, the experience of an Outreach Program in the period between 2010 and 2011. The study focused on health education interventions as strategies to improve the adherence of individuals with insulin-dependent diabetes mellitus (IDDM), clients of a blood glucose self-monitoring program. In addition, we intended to contribute to the reorganization of the program's working processes in the unit. Health education strategies were used in both educational groups and home visits, thus permitting the provision of care that was more individualized. Data regarding the clients were organized on a spreadsheet and in files for the Family Health teams, which made it easier to identify the patients, including those who were absent, helping to decentralize the care. By using health education strategies, we intended to contribute to a more comprehensive and emancipatory care of the clients, aimed at a continuous reflection of the workers regarding their practices.

## DESCRIPTORS

Diabetes mellitus  
Health education  
Family Health Program  
Primary Health Care  
Community health nursing

## RESUMO

O trabalho relata, de maneira sistematizada e crítica, a experiência de um Projeto de Extensão no período de 2010 a 2011. Teve como foco ações de educação em saúde como estratégia para melhorar a adesão das pessoas com diabetes mellitus e insulino-dependentes, de uma Unidade Básica de Saúde do município de São Paulo, ao Programa Automonitoramento Glicêmico. Além disso, pretendeu-se contribuir na reorganização do processo de trabalho em relação ao Programa na unidade. Foram utilizadas estratégias de educação em saúde em grupos educativos e visitas domiciliares, assim, possibilitando cuidados mais singulares. Dados dos usuários foram organizados em planilha e em pastas para as equipes de Saúde da Família, facilitando na identificação dos usuários, inclusive os faltosos, e auxiliando na descentralização do cuidado. Com as ações de educação em saúde, pretendeu-se contribuir para um cuidado mais integral e emancipatório aos usuários, para um contínuo refletir dos trabalhadores quanto a suas práticas.

## DESCRITORES

Diabetes mellitus  
Educação em saúde  
Programa Saúde da Família  
Atenção Primária à Saúde  
Enfermagem em saúde comunitária

## RESUMEN

El trabajo relata crítica y sistemáticamente la experiencia de un Proyecto de Extensión, efectuado entre 2010 y 2011. Enfocó acciones de educación en salud como estrategia para mejorar la adhesión de personas con diabetes mellitus e insulino-dependientes de Unidad Básica de Salud del municipio de São Paulo al Programa Automonitoreo Glucémico. Además, se pretendió contribuir en la reorganización del proceso de trabajo relativo al Programa en la unidad. Fueron utilizadas estrategias de educación en salud en grupos educativos y visitas domiciliarias, posibilitándose cuidados más personalizados. Los datos de los pacientes se organizaron en planillas y carpetas para los equipos de Salud de la Familia, facilitando la identificación de pacientes, inclusive los ausentes, y ayudando a descentralizar la atención. Con las acciones de educación en salud se pretendió contribuir a una atención más integral y emancipatoria a los pacientes y a una reflexión permanente del trabajador respecto de sus prácticas.

## DESCRIPTORES

Diabetes mellitus  
Educación en salud  
Programa de Salud Familiar  
Atención Primaria de Salud  
Enfermería en salud comunitaria

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## INTRODUCTION

This study synthesizes information concerning experience of an Extension Project and reports in a critical way about the Project, effective from January 2010 to January 2011. The Project had the participation of two scholarship students attending the 3<sup>rd</sup> and 4<sup>th</sup> years at the University of São Paulo, School of Nursing (EE-USP) and was financially supported by the Vice-Presidency of Culture and Extension at USP. The project's focus was health education as a strategy to improve the adherence of insulin-dependent individuals to a Self-Monitoring of Blood Glucose Program administrated by a Primary Health Care (PHC) unit in São Paulo, Brazil.

It was estimated in 2010 that there were 10 million people in Brazil with diabetes mellitus (DM). DM together with hypertension is the most frequent cause of mortality, hospitalizations, and amputations of lower limbs. It is a metabolic disease caused by a deficiency in the production and/or action of insulin and is characterized by an increase of blood glucose, leading to acute and chronic complications. These complications can lead to worsened quality of life and increased costs to treat the condition. Therefore, the treatment needs to be based on actions to prevent acute and chronic complications as well as health promotion actions to improve the quality of life of patients and their families<sup>(1-4)</sup>.

There are many therapeutic actions to control glucose that include regular exercise, a balanced diet, and follow-up with an interdisciplinary staff. When necessary, these actions are associated with medication therapy, included in which is the regular use of insulin<sup>(1)</sup>. Studies also show benefits associated with glucose self-control because it provides patients and health workers parameters to evaluate its efficacy and any need to adjust it<sup>(5-6)</sup>.

In Brazil, this type of glucose control is still seldom performed by DM patients due to the high cost of supplies<sup>(7)</sup>. Other factors include difficulties of patients and related characteristics, understanding the importance of performing this monitoring, the low investment in prevention and health promotion actions, gaps in the education and background of health workers, and also limitations found in the routine practices of the services themselves.

### **Health education directed to DM patients care**

According to the World Health Organization (WHO), health care services that provide opportune information, support and monitoring can improve treatment adherence, reducing the cost of chronic conditions and improv-

ing the quality of life of DM patients<sup>(8)</sup>. In this context, goals of health education focused on DM, in addition to seeking glucose control, encompass promoting the well-being of patients and their families<sup>(9-10)</sup>. For that, health education actions should be constantly provided in home visits and nursing and medical consultations, taking into account the characteristics and the profile of the population to which it is directed.

Strategies need to be appropriate and content should be transferred in a simple manner. Such strategies should be able to motivate people to understand the disease and actively assume their role in the treatment from more personal aspects such as beliefs and psychosocial conditions, up to the social implications of the health-disease continuum<sup>(10)</sup>.

Even though self-monitoring of blood glucose is an advancement in DM care, the supply of material, longitudinal follow-up of patients along with health promotion and education strategies capable of encouraging patients to reflect on the disease, its care, and the importance of self-monitoring to prevent acute and chronic complications and to improve their quality of care are also required.

This Extension Project was implemented with the view that to provide integral care to DM patients one needs to pay attention to diverse aspects of care, including health education for the patients and their families. The purpose of this project was to enable undergraduate students to participate in the health service routine, sharing experiences and enriching both their learning process and the work process of the health staff.

### **Self-Monitoring of Blood Glucose Program**

The City Health Department of São Paulo, in 2005, initiated a Self-Monitoring of Blood Glucose Program in five referral units, enrolling DM patients to deliver supplies to 3,000 users transferred from state centers. The Program sought to enroll and care for insulin-dependent DM patients, providing glucometers and enabling continuous access to supplies to ensure self-monitoring of capillary blood glucose. In 2008, a decentralization process was initiated and return appointments began to be monitored in the referral PHC units<sup>(11)</sup>. The program currently includes Family Health Strategy (FHS) teams to enroll and monitor individuals who need daily blood glucose monitoring<sup>(11)</sup>.

Even though self-monitoring of blood glucose is an advancement in DM care, the supply of material, longitudinal follow-up of patients along with health promotion and education strategies capable of encouraging patients to reflect on the disease, its care, and the importance of self-monitoring to prevent acute and chronic complications and to improve their quality of care are also required.

## THE EXTENSION PROJECT

The need to promote educational interventions among DM patients in the area covered by a PHC unit of the public network of the state of São Paulo, located in

the region of the Lapa-Pinheiros Technical Supervision in the Midwest Health Coordination, was observed during the practical teaching activities performed in 2009 with 2<sup>nd</sup> and 3<sup>rd</sup> year undergraduate students from the EE-USP. Such a need emerged from the experience of students with this population's profile and from the promotion of the prevention and diagnosis of DM and its treatment in light of its tendencies in the Brazilian population.

Additionally, the students were able to become familiar with health actions related to the operation of the Self-Monitoring Blood Glucose Program in PHC units and verify the low adherence of the enrolled users and the need to organize its actions to improve care.

Based on this experience and the understanding that an extension project within the undergraduate program is a process that links teaching and research and also enables a transforming interaction between university and society<sup>(12)</sup>, the general objective of this project was to improve the adherence of users enrolled in the self-monitoring program in the PHC unit's covered area. We also intended to support the FHS teams in the PHC unit in organizing the work process of care provided to these users, in addition to establishing and practicing health education together with the staff.

## EXPERIENCE REPORT

### ***Familiarization with the Primary Health Care unit and systematization of records of the Self-Monitoring Blood Glucose Program***

Initially, the students, under the supervision and in partnership with one nurse in the PHC unit and another nurse from EE-USP who provide pedagogical support, performed a search of scientific literature appropriate to the project's subject and concomitantly initiated work in the PHC unit, which enabled them to more concretely grasp the context of workers and users enrolled in the self-monitoring program.

At this point, all the registrations in the PHC unit were gathered on a spreadsheet in order to organize and optimize the program's work process. This process revealed the PHC unit was responsible for 166 users registered in the self-monitoring program who were distributed among four FHS teams; 51 of these were considered absentees, that is, they had not attended their last two follow-up appointments.

### ***The educational groups***

There was a DM educational group under the responsibility of one of the four FHS teams. This intervention was held weekly in locations that belonged to social services located near the PHC unit. As more effective participation in this educational group was observed among those users under the responsibility of the team administering the intervention, we proposed the organization of groups

specific to each team in order to reinforce follow-up, improve adherence to the program and reduce the number of absentees.

Distance seemed to be a limitation for the participation of users in educational groups held in the unit or near it, especially for those with mobility impairment; in addition to the distance, the streets around the covered area are very rough. Hence, the groups were organized for the DM educational intervention, designed to focus on the self-monitoring program. The intervention would be held weekly, each week in the area covered by one of the teams. Community Health Agents (CHA) helped to publicize the project and four social venues located in each of the areas covered by each of the FHS teams provided a space for the meetings. Four educational meetings were performed in April 2010 but adherence was low; few or no users attended.

Hence, the strategy was changed and we opted to implement health educational actions during home visits. It would also permit coming to know the users enrolled in the program better, identify their difficulties participating in the educational groups, and adapting certain care actions related to DM and the self-monitoring of blood glucose.

### ***The home visits***

The home visits were seen as an opportunity to better know and understand the lifestyle of the patients and their families. It was a time that enabled the search for peculiarities in terms of patients' self-care and be in proximity to them<sup>(13)</sup>. Identifying the conditions involved in the health-disease continuum, including social determinants, helps the health staff to develop and share appropriate care plans with users.

Following the suggestion of the unit's nurse, we gave priority to home visits to the absentees in order to explore their difficulties and reasons for not attending the groups, as well as to take the opportunity to provide instructions, clarify potential doubts, and invite them to participate in the educational DM group held in the unit. A script was developed to guide health educational actions during home visits.

Data systematized in the spreadsheet enabled contacting users to schedule dates and times of visits. All the home visits included the presence of CHAs, ensuring the partnership of the FHS teams from the PHC unit and the establishment of bonds between the teams and users. A total of 18 home visits were performed from May to December 2010, seven visits to absentees and 11 visits to those not considered absentees.

The home visits revealed that:

- 12 users had another chronic disease, among which hypertension and heart diseases stood out;

- 11 did not exercise regularly;
- 13 considered their diet healthy, mainly reporting an increase of fruits and vegetables and a decrease in carbohydrates and sugars;
- 10 reported difficulties from having DM, such as: difficulty in keeping an appropriate diet, vision problems and problems walking due to decompensated DM.

As home visits were used as a health education strategy, a more individualized form of care was provided to insulin-dependent patients, emphasizing the importance of monitoring blood glucose, regularly exercising, and maintaining a balanced diet. The home visits were conducive to providing instructions concerning the appropriate use of the glucometer, how to apply and sites where to apply insulin, as well as to providing guidance related to other medications used by the patients.

An illustrative booklet was developed for those with reading difficulties in order to facilitate understanding concerning times when insulin should be applied, according to medical prescription, and recording measurements of blood glucose.

After the home visits, the cases were discussed with the nurses and the health team responsible for follow-up. Such a discussion enabled providing support to the health workers to continue caring for and monitoring their patients' health conditions.

### **The Self-Monitoring Blood Glucose Program in the Primary Health Care unit**

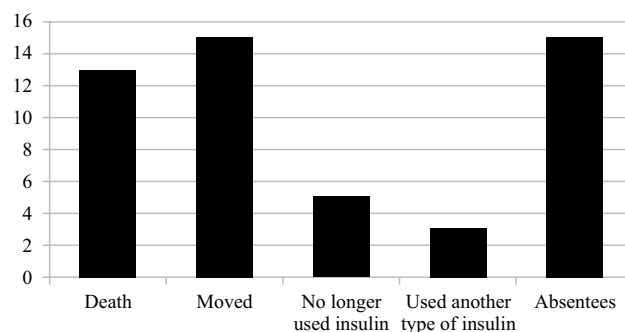
Aiming to contribute to the care provided to insulin-dependent users enrolled in the self-monitoring program, it was proposed that the nurses reorganize the way follow-up was performed; one nurse had been responsible for monitoring all the enrolled users since the decentralization process that was carried out in August 2008. With an increased number of registrations, this process then became a responsibility of the four FHS teams so that each team would monitor the group under their responsibility and also be responsible for performing the follow-up with the patients' families.

For that, in addition to the spreadsheet containing registration information, the physical medical files, in which documents required from patients to be included in the program are kept, were also reorganized. These used to be stored in a steel cabinet drawer but, due to the approximately 166 medical files and the unit's small physical structure, it no longer contained it adequately. Additionally, the cabinet was in a meeting room and access to it was limited when the room was being used.

Given these conditions, we suggested installing moveable cabinets separated by team. One filling cabinet was provided for each team (four) and another was provided to store inactive registrations. All the registrations were

reviewed and a checklist of documents was developed for each. This allowed visualizing those that were incomplete, facilitating retrieving and/or updating documents required to complete them.

The review and reorganization of registration documents, telephone calls to users, home visits, and conversations with CHAs enabled us to draw a profile concerning the reasons users did not attend follow-up in the unit:



**Figure 1** – Reasons users did not attend follow-up visits in the unit

As shown in Figure 1, 13 out of the 51 absentees had died, 15 had moved from the covered area and had not informed the unit, five no longer used insulin, three used a type of insulin not provided by the unit, and 15 were, in fact, just absentees. Based on this profile, more elements were gathered for the health teams to reorganize the records. Additionally, when deceased users, those who had moved or no longer used insulin, were removed from the program's enrollment and gave back the glucometer, those on the waiting list were benefited.

Finally, another instrument was developed to optimize care provided to users, adding a card, where return visits are scheduled, to the file where blood glucose measures were noted. This instrument was made as a refrigerator magnet to be placed on an easy to spot site. The material is being manufactured with funding from the Extension Project and will be later delivered to the unit to be distributed to the users enrolled in the self-monitoring program.

## **CONCLUSION**

This study showed that the educational health actions directed to insulin-dependent users enrolled in the Self-Monitoring Blood Glucose Program caused the health teams to reflect on the care provided to these users, leading to rearrangement of the work process related to the unit's program in order to facilitate the teams' monitoring activities and promote the improvement of care provided to individuals and their families.

There are many challenges to be overcome, such as difficulties of users and the health workers themselves in providing more integral care permeated by the individuals' autonomy. Some users who still have many doubts are often afraid to handle material and self-monitor their blood glu-

cose. They also have difficulties making changes in diet and habits that promote health and prevent diseases. Performing follow-up and monitoring all users is also a challenge faced by health workers. Time dedicated by nurses to home visits with those enrolled in the program is limited due to the overload of tasks within the unit and the demands of so many other home visits to users who also require frequent care. Such a condition may limit the delivery of integral care but it can be partially overcome if effective teamwork occurs, since CHAs know a lot about the difficulties and needs of users.

The experience of the undergraduate students with extension activities provided them a differential in their education as future health workers. They acquired knowledge and perceived the importance of care based on health education, especially in conditions of chronic disease. It is expected that this Extension Project will contribute to a continuous rethinking of the work process capable of producing more emancipatory health actions for health workers and insulin-dependent users enrolled in the Self-Monitoring of Blood Glucose Program.

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